the OIL WEEKLY

FOR THE DRILLING, PRODUCING ... INDUSTRY

A DESIGN TO EFFICIENTLY DRILL EACH SPECIFIC FORMATION

"T"

For sticky formations and shale, salt, unconsolidated sands, soft limestone, etc.

"2T"

Where streaks of abrasive formations are interspersed with soft limestone, shale, etc.

"M"

For salt, gypsum, anhydrite, medium hard shale, lime rocks, etc., including unconsolidated sands.

"HM"

"HM" type for medium hard, non-abrasive limerocks and broken formations.

"2HM"

For the medium hard abrasive limestones and broken formations.

"2H"

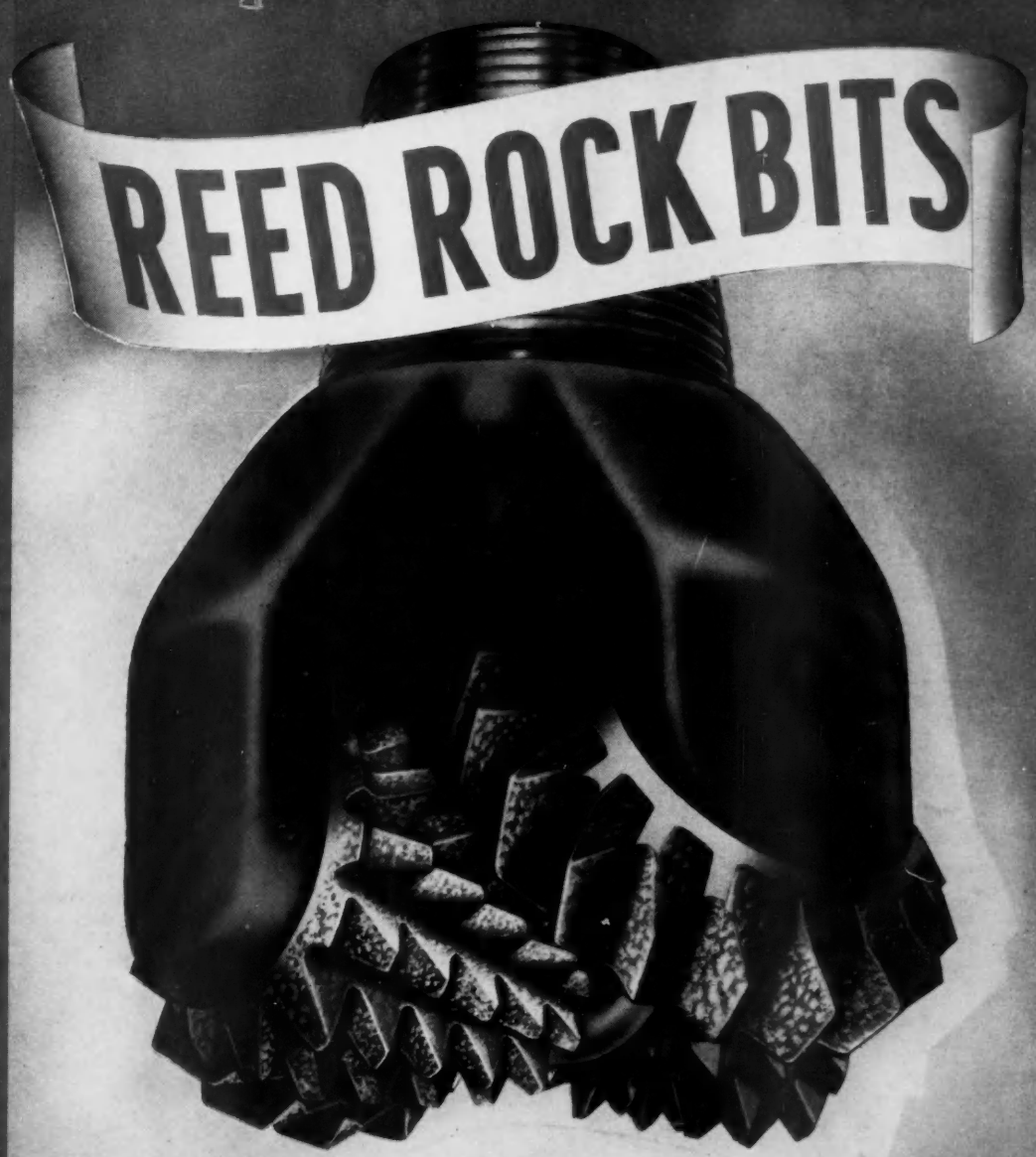
For the hard, dense limestones and abrasive or non-abrasive limestones and sands.

"2"

Medium hard formations which chip easily, such as: anhydrite, hard lime rock, hard shale, etc.

"2C"

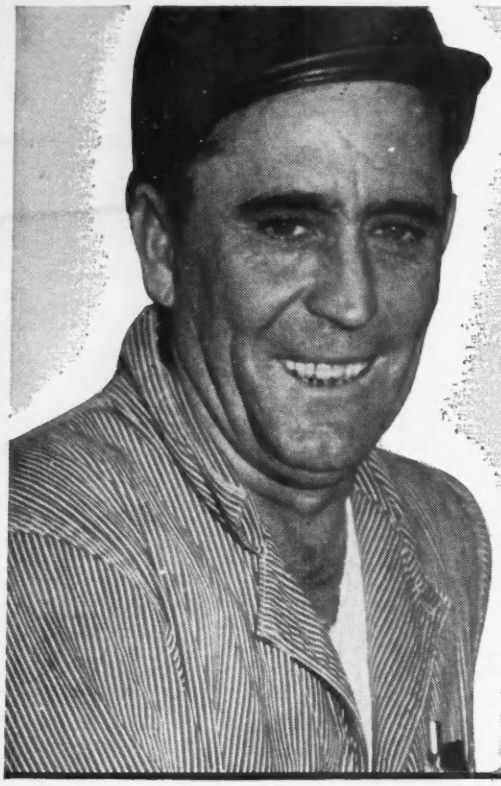
For hard, abrasive formations and the hard, dense lime rocks, abrasive sands, chert, etc.



UNITIZED FOR GREATER SAFETY

Reed ROLLER BIT COMPANY

HOUSTON, TEXAS



UNAFLO puts me *In Partnership With Time!*

EVER SINCE I CHANGED to Unaflo . . . the cement with the delayed, the postponed, the *retarded* set . . . time has been my partner in down-the-well cementing operations! Here's why:

Because of its *retarded* set, Unaflo does not stiffen prematurely. It stays fluid and pumpable during its entire period of retardation . . . even at high well temperatures and pressures, and with heavy slurries.

As a result, I have *ample time* to get the cement in place during normal operations . . . *extra time* in emergencies to correct the causes of trouble. Further, when time tells Unaflo to harden, it does so with a solid, impervious seal.

Send for "Unaflo Oil-Well Tables," a shirt-pocket booklet of down-the-well volumes of cement and mud. Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Amicable Building, Waco; Oklahoma City; Birmingham; Chicago; New York. Export Distributors, United States Steel Export Company, New York.

Unaflo *Retarded* **Cement**
Resistant to Sulfate Waters

Atlas Portland Cement—Type I

Atlas Portland Cement—Type II
Resistant to Sulfate Waters

Atlas High-Early Cement—Type III

OW-U-74

UNIVERSAL ATLAS CEMENT COMPANY

U. S. STEEL RADIO SHOW — *Sunday Evenings — Consult local newspaper for time and station.*

It pays to "Float" Drill Pipe

with a

BAKER BAKWIK DRILL PIPE FLOAT

(Product No. 480)

It brings you these important results . . .

PREVENTS PLUGGING THE BIT with the hazard and grief of wet strings.

RELIEVES WEIGHT ON DERRICK and other rig equipment.

LENGTHENS LIFE OF WIRE LINES and brake bands.

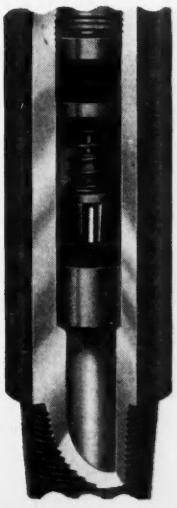
MINIMIZES OR PREVENTS SERIOUS DAMAGE in event of a parted drilling string.

DOES NOT INTERFERE WITH DRILLING or the running of surveying device.

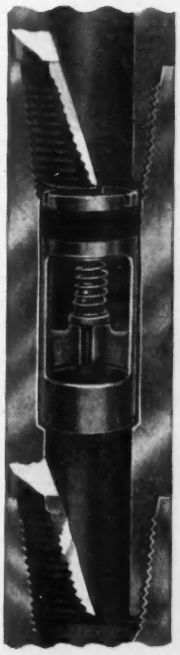
NO TROUBLE TO INSTALL OR REMOVE

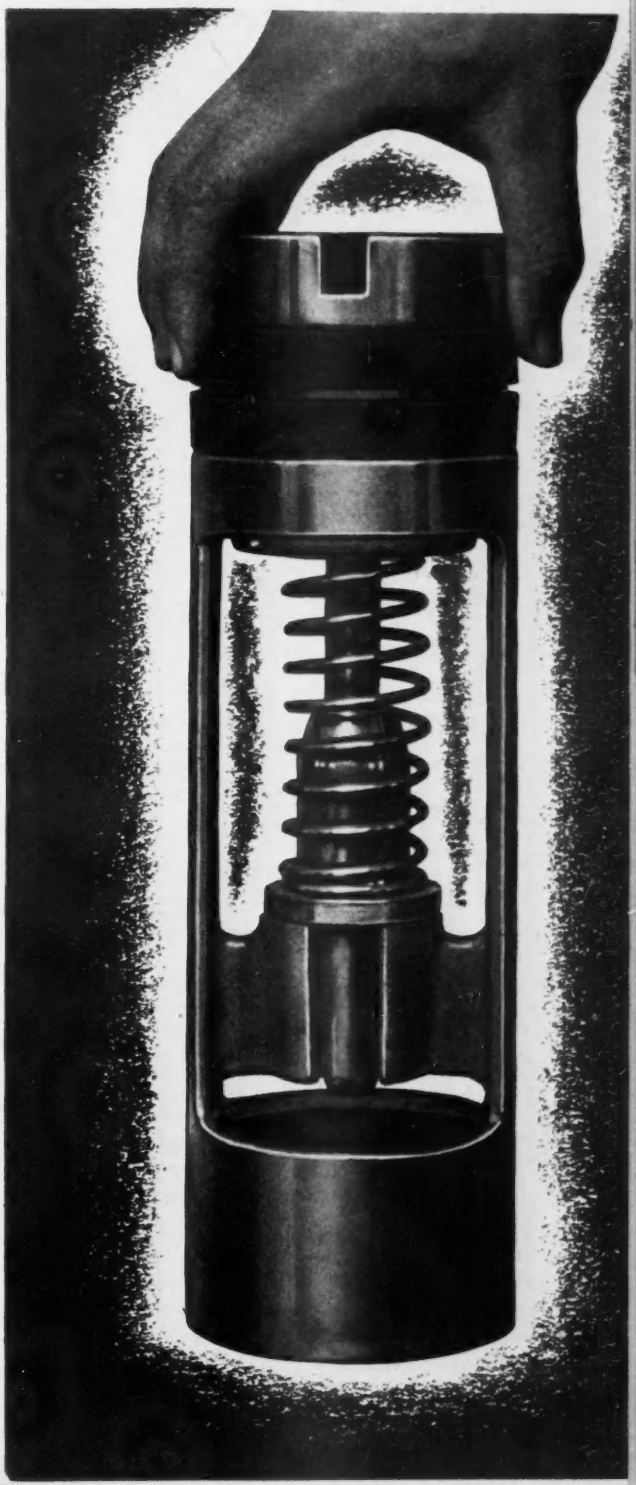
The Baker BAKWIK Model "B" Drill Pipe Float Valve Assembly is positioned at the desired point in the drilling string, either in the float body or in a valve chamber in the drill collar. The strong, simple valve assembly—made entirely without threads—is dropped into place by hand and held securely in position by the tool joint pin above it; see view at right. No tools or wrenches are required to install, or remove, this safe, positive back-pressure valve. When an unrestricted fluid passageway is desired, the BAKWIK Valve Assembly can be removed from the float body, or drill collar, quickly and easily. The Valve Assembly is readily serviced right on the derrick floor, with inexpensive parts which are available from practically any supply store.

The Valve Assembly is sturdy and simple in construction, and is easily dropped in place by hand, where



it is held in place by the tool joint pin above it. No tools or wrenches are required to install or remove.

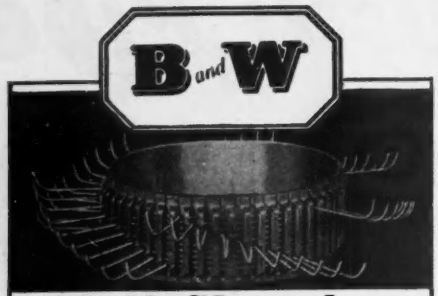




BAKER OIL TOOLS

KER OIL TOOLS, INC., LOS ANGELES • HOUSTON • NEW YORK

Baker BAKWIK Model "B" Drill Pipe Floats are "standard equipment" with a large majority of modern Drilling Contractors, and the Drilling Departments of oil operators. They find it extremely low-cost insurance for the important results and worthwhile savings it provides. Contact your nearest Baker representative or office for additional details.

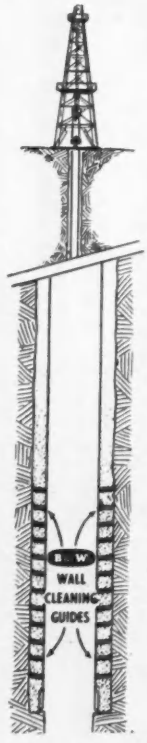


Wall Cleaning Guides

on your

SURFACE CASING

Prevent CRATERING



Prevent BLOW-OUTS

Wall Cleaning Guides placed on the bottom joints of surface casing protect against blow-outs around the casing, or cratering resulting from an imperfect cement job.

Prevent BACKING OFF

The rotation and jarring of the drill pipe tends to loosen the threads of the bottom joint of surface casing, particularly opposite an imperfect cement job. The unscrewing of this joint may result in an impossible fishing job, or abandonment.

Wall Cleaning Guides placed on the bottom joints will assist in securing a *perfect* cement job which wil' securely anchor the casing to the formation.

TABLE OF DIMENSIONS

Casing Size	Hole Diameter	Outside Wire Diam.
8-5/8"	12-1/4"	14-1/2"
9-5/8"	12-1/4"	14-1/2"
10-3/4"	14-3/4"	16-3/4"
13-3/8"	17-1/4"	20-1/4"

B and W INCORPORATED

BRUCE BARKIS — KENNETH WRIGHT

Well Completion Specialists

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GULF COAST: 305 M & M Building
Houston, Texas • Phone: Preston 9783

Looking Ahead

WITH THE EDITOR

THE United States accounts for a surprisingly larger portion of the world's drilling activity than it does of the world's crude production.

A survey of world drilling and production indicates that at the end of 1945 the U. S. was the site of about 82 percent of the world's drilling operations at that time, although U. S. production of oil during 1945 was only about 62 percent of the world total.

Jack Logan, associate editor of THE OIL WEEKLY, whose articles on "World Drilling Operations" will appear in the International Feature Issue, October 7, points out that this disparity existed because of large flush production in various foreign fields where drilling of wells was unnecessary or held down by lack of equipment.

Other articles scheduled to appear in The International Feature Issue include a discussion of Iran by Henry Ozanne, staff writer, and stories by George O. Ives, staff writer, on Colombia.

PRIOR to 1940, greater emphasis was placed on new discoveries and production than on drilling costs. Since that date, increase in the cost of labor and materials, added to the regulated price level of petroleum and its products, have given costs the spotlight in the drilling industry. Beginning in 1939, the average cost of drilling took an upward trend and has steadily climbed.

Omitting exploratory costs, approximately 75 percent of the lifetime cost of a well is incurred prior to production. Costs are known to vary directly but not proportionately with depth, but during the past seven years, the curve has become steeper. A study of drilling costs along with comparisons by years will be presented in next week's issue of THE OIL WEEKLY by David I. Siskind, Construction Division, Office of Domestic Commerce.

THE OIL WEEKLY, published every Monday. Entered as second class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

For more than a QUARTER-CENTURY . . .

The OIL WEEKLY has performed a specialized editorial service for the worldwide drilling, producing and pipe line industry. Year after year, more and more men engaged in this specialized business have added their names to the growing list of subscriber-readers to the point where today there are few men of authority in the oil producing business who do not make a habit of reading *The* OIL WEEKLY.

Today the paid subscriber circulation of *The* OIL WEEKLY is at a new all-time high.

Today the subscription-renewal percentage of *The* OIL WEEKLY is in excess of 80%—in the top bracket among business papers of all industries.

Today more men directly and exclusively engaged in the oil producing industry subscribe to *The* OIL WEEKLY than to any other publication.

Repeatedly on surveys conducted by manufacturers *The* OIL WEEKLY is designated as first choice among men of authority in the oil producing industry throughout the world.

The OIL WEEKLY

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for the drilling-producing-pipe line industry

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for the refining-natural gasoline industry

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ENGINEERING NEWS STATISTICS
R. L. DUDLEY, President, Publisher A. L. BURNS, General Manager

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with Aeroseal*Q

From oil production centers throughout the country, reports testify to the advantages of proper mud control with Cyanamid's AEROSEAL Q.

A "two-miler" recently was completed in only 191 days actual drilling time! A record in itself—considering the difficulties encountered beyond the 10,000 foot level—it emphasizes the importance of controlled drilling mud in deep-well operations, and reflects the trend to offset increases in per-day drilling costs by reducing the total number of drilling days.

AEROSEAL Q Drilling Mud Conditioning Compound offers a reliable means of reducing total drilling costs and time by assuring low water loss and a thin, tight mud cake at all times. Furthermore, its effectiveness under *all* conditions gives added assurance of faster drilling of straight, full-gage holes—with consequent freedom from breakdowns due to tight hole and stuck pipe.

A highly skilled technical staff—plus large, modern production facilities enable Cyanamid to produce AEROSEAL Q in quantities to meet large requirements. Additional information or technical assistance may be had by contacting American Cyanamid Company, 229 Shell Bldg., Houston, Texas, or Azusa, California. *Reg. U. S. Pat. Off.

When Performance Counts — Call on Cyanamid

"IS YOUR DRILLING MUD A GOOD MIXER?" asks General Mud. "If it isn't, you can depend upon AEROSEAL Q to adjust its weight, viscosity and other properties to meet conditions in any given well. Now is the time to investigate the all-important advantages of better mud control with AEROSEAL Q!"

AMERICAN Cyanamid COMPANY

Industrial Chemicals Division

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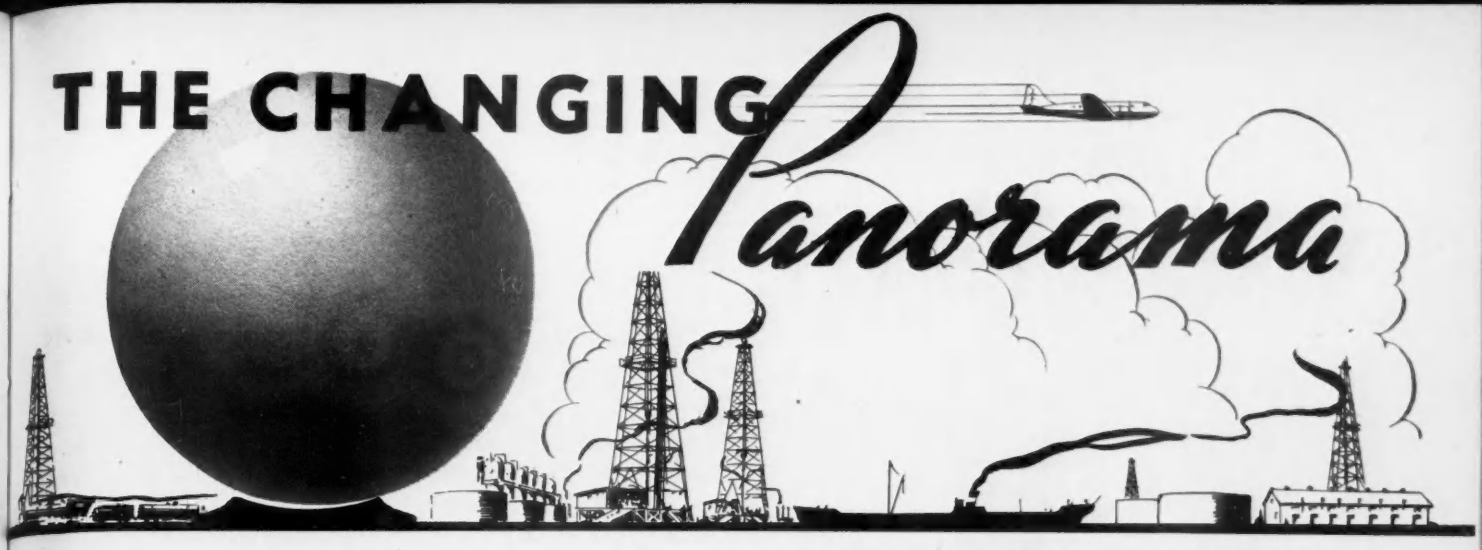
THE CHANGING Panorama



National Muddle for Congress to Solve

INDUSTRIES operating at heavy losses despite all-time record demand for goods, and unemployment in the face of pressing needs for labor are among the anomalies of the current economic situation.

Industry after industry is sending representatives to Washington to tell administration officials that they cannot operate efficiently and successfully under the half-free and half-controlled economy which is the result of the government's maneuvers to avoid inflation.

Itself freed from price controls and limitations upon operations, the oil industry is seriously affected by administration price and production policies which other industries, from which oil operators get supplies, protest are handicapping them.

As an example of depression in the midst of prosperity, the "logic" followed by the Office of Price Administration, as applied to meat, has thrown a reported 80,000 persons out of work in the packing industry, placed the shoe and leather industries in a precarious position, and disrupted retail food distribution. Coal miners have quit work because they could get no meat.

Again, although the automobile industry has the greatest backlog of orders in its history, it has lost money this year because of inability to attain a high level of operations in the face of strikes and material shortages.

While OPA seeks to hold the line, the administration has seriously weakened its ability to stabilize wages and through its repudiation of the Wage Stabilization Board in the case of the maritime strike has set the stage for a new round of labor demands and strikes, probably to come after the November elections.

Freight traffic on the railroads holds close to the wartime peak, yet most carriers are heavy losers this year and railroad officials are pessimistic over the outlook for higher rates from the Interstate Commerce Commission to cover increased wages and other costs.

The recent sharp decline in the stock market has thrown a shadow over Treasury revenue prospects and the outlook for a balanced federal budget.

Failure of the administration to remedy the situation during the next few months will result in its being one of the first matters to engage the attention of Congress when it convenes in January.

A Citizen's Duty Before Election Day

IT'S NOT so long until general election time when congressmen will be elected from all the states. And in January they will convene in Washington for a continuation of the grind that, during the past decade, has turned out many a legislative act—acts as numerous as they are varied in intent and purpose.

Men sent to Washington are of the people's own choice.

So now, two months before election, when nominations in most states have been made by the contesting parties, is not too soon to suggest that voters give some study to the political beliefs and leanings of the men who aspire to Congress. Pick them as objectively as you would, in normal times, select a house or an automobile. Give every characteristic close consideration and PICK THE BEST man in the race.

This country can stand a lot of good men in the legislative halls at Washington. That's true at any time, but particularly true right now. Choose a good sound thinker, and give him your support between now and November 5. Also, after election, forget him not nor permit him to forget the principles which caused you to assist in getting him elected.

Industry Auto Mishap Record Not So Good

MOTOR-VEHICLE accident rates of the petroleum industry in 1945 were the greatest since 1941. The higher rates reported constitute a definite challenge to those responsible for the maintenance and operation of the industry's motor vehicles, although depreciated conditions of vehicles and tires undoubtedly were factors partly responsible for the increase.

According to the American Petroleum Institute's Department of Accident Prevention, the number of accidents per 100 vehicles increased from 14.1 in 1944 to 18.0. These figures are based on the reports of 151 oil companies, which operated 49,986 passenger cars and trucks. The report shows that trucks have more accidents than passenger cars.

The highest ratio of accidents was in the marketing division of the industry, probably due to the fact vehicles in this work use heavily traveled roads and streets more frequently. Lowest ratio of accidents was in the production division. While the marketing division was experiencing 22.6 accidents per 100 vehicles, the production branch had but 9.0 accidents per 100 vehicles.

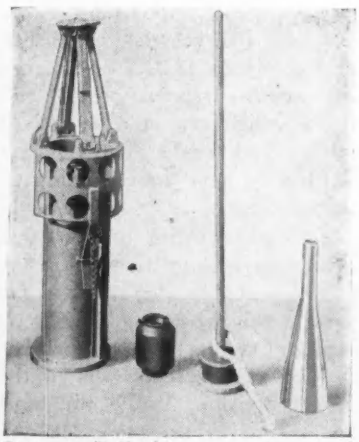
Of the 151 companies reporting, 103 were able to report on the number of miles traveled. Here again, the marketing division was high and the production division low. Whereas the industry as a whole was experiencing 1.28 accidents per 100,000 vehicle miles, marketing vehicles had a rate of 1.62 and production cars and trucks only 0.57 accidents per 100,000 vehicle miles.

* * *

There has not been a strike in any major industry which has left the workers who participated in it one cent better off in weekly take-home purchasing power. And I doubt if there ever will be while the cat chases its tail.

THE IRON AGE.

1. Place guide shaft in Expander Cylinder, put arms and dogs in position. Lubricate Protector, Cone and Tool Joint with Patterson-Ballagh Installation Paste. Place Protector and Cone on Guide Shaft and insert pedal dogs inside the lower lip of the Protector. Put Safety Guard in position.



Patterson-Ballagh's new improved Universal Expander, showing Rubber Bumper and Bumper Plate, Protector, Guide Shaft, Pull-out Rope and Expanding Cone. Note provision made for placing safety guard out of way when not in use.

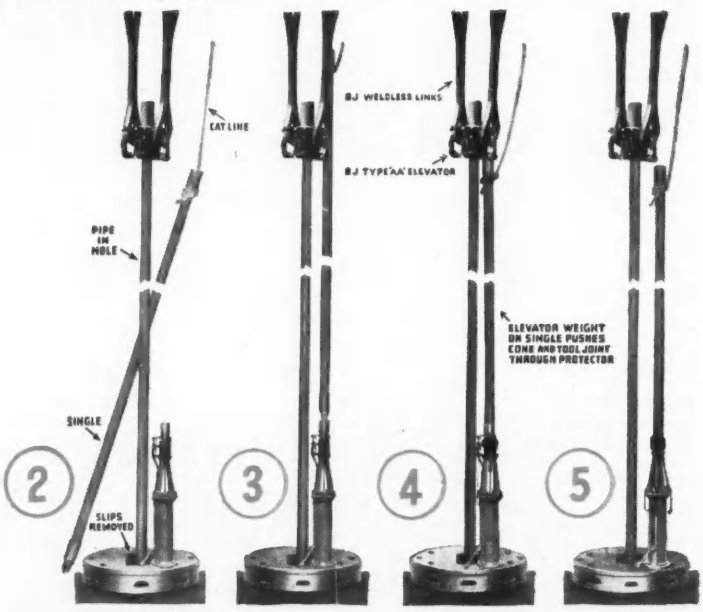
It's very Simple!

Patterson-Ballagh Protectors can be installed simply and easily so that they won't come off with the roughest handling

Patterson-Ballagh's New Improved Universal Expander makes it easy to install Casing Protectors and Drill Pipe Stablizers by *using the weight of the Drill Pipe* in the hole suspended by the elevators. The five simple steps on this page show how easy this operation is.

Once installed in this quick easy way, Patterson-Ballagh Protectors and Stabilizers need no further attention. No matter how deep the hole or how tough the drilling, you can depend on better, faster, safer operation.

Putting a Casing Protector on every single will give you 100% Protection—the only safe way to drill.



2. Place Expander assembly on table. Drag single into derrick with cat line.

3. Draw up single so that it is squarely above Cone, and then lower into Cone. Raise string so that elevators are directly above single. Lubricate the Tool Joint and 6 inches of the single.

4. Lower elevators so that they rest securely on the single as shown. The Driller may now release the weight on the elevators which will force the single and Cone through the protector to the desired position: 2 to 3 feet above the Tool Joint. The Cone will drop through into the Expander Cylinder ready to remove for the next installation.

5. The installation is now complete. Next, make up this single on the string going into the hole, and repeat the operation on the next single. After each installation pull the Cone out of the Cylinder with the Pull-out Rope.

This installation equipment is loaned to operators, free of charge in the U.S.A.

Specify

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The Week's News

NEW procedures of the FPC are being put into effect with applications now being filed, giving state commissions an election as to the procedure to be followed. Page 16.

Navy's Resources Control Plan—Over-all control of the nation's resources, including oil, is seen by the Navy as the only way to meet the needs of war. Page 14.

Lea to Retire—Representative Clarence F. Lea of California, chairman of the House Interstate and Foreign Commerce Committee and head of its petroleum subcommittee, announces plans to retire at the end of his next term.

NPC Organizes—Framework on which the National Petroleum Council will operate as an advisory body to the Secretary of the Interior and the Director of the Oil and Gas Division adopted. Story below.

Canol Inquiry—The Senate War Investigating Committee deferred acceptance of Admiral King's rebuttal statement in connection with the Canol project and instead demanded that the Canol file be removed from the "secret" classification. Page 14.

API Initiates Award—John M. Lovejoy heads first committee to select individual making most outstanding contribution to the petroleum industry to receive annual award from API. Page 12.

Synthetic Rubber Costs—President Collyer of The B. F. Goodrich Company discloses that synthetic rubber costs have been reduced to a point where private industry could take over government plants and sell GRS at a profit at 15 to 17 cents a pound. Page 12.

Allocation Orders Attacked—Validity of more than 30 CPA allocation orders, including those covering lead and ethyl lead, was clouded last week when the Federal District Court for the District of Columbia granted a preliminary injuction against enforcement of a Department of Agriculture order pending trial. The suit was brought by Publicker Industries of Philadelphia, distillers, to block the distribution of excess grain.

Roumanian War Damage—American oil companies with properties in Roumania may be compensated for only one-third the damages sustained during the war as a result of a split in the Paris Peace Conference which threatens defeat of a British proposal for 100 percent compensation. Page 15.

New Council Organized, Safeguards Under Antitrust Laws Chief Topic

The National Petroleum Council last week perfected its organization, set up a budget of not exceeding $50,000 a year, to be met by voluntary contributions of members, and laid down the framework on which it will operate as an advisory body to the Secretary of the Interior and the Director of the Oil and Gas Division.

A report of its organization committee outlining these and other phases of the council's structure was adopted after exhaustive discussion of the legal situation created by the several letters of the Attorney General laying down the restrictions under which the NPC must operate if it is not to run afoul of the antitrust laws.

In a resolution which will serve as the by-laws of the council it was specified that it shall have the right to decide whether it will consider any matter referred to it and specifically provided that it will not concern itself with trade practices or the like, nor engage generally in "any of the usual trade association activities."

The NPC will be officered by a chairman and a vice chairman, selected from its membership and serving without compensation, and a paid secretary-treasurer who need not be a member. The two top executives will be elected annually.

Since the membership of the council is to be appointed annually by the Secretary of the Interior, an organization meeting will be necessary each year. Regular meetings will be held quarterly, but special meetings may be called at the request of 25 members.

Every matter submitted or approved for council consideration is first to be passed upon by an agenda committee, which will determine whether it is proper and advisable for council action. Although the basic outline of the council's field as seen by the Department of Justice involved only matters referred to it by the secretary or director, the resolution provided that any council member may bring up subjects which he wishes to have considered. In such cases, the matter will be referred to the Secretary or Director for approval, and if approved will go to the agenda committee for a report.

In line with the position of the Department of Justice, it is provided that any council or committee member who feels that the council or a committee has failed to give appropriate consideration to views or proposals advanced by him at a regularly constituted meeting may make his viewpoint a part of the record of that meeting.

Report Carefully Prepared

In its report, signed by Chairman Walter S. Hallanan and 12 of the 15 members present at the meeting September 24 at which it was adopted (J. Frank Drake, A. C. Mattei and J. Howard Pew being unable to attend), the committee emphasized that its recommendations had been prepared after thorough study of the correspondence with the Department of Justice, and reports of the legal subcommittee and the subcommittee on legal problems.

In those reports it was stressed that the limitations imposed by the department might indicate that the council could consider only such matters as were formally assigned to it by the Interior Department and could not discuss the advisability of asking the Secretary or Director to submit or approbate a matter as appropriate for consideration.

"In view of this possible construction of the acting Attorney General's letter dated September 11, 1946, it would seem that, for the present, the safer procedure would be not to have any discussions in the council on any matter until the Secretary of the Interior or the Director of the Oil and Gas Division has duly submitted or formally approved such matters as appropriate for consideration by the council," the legal subcommittee warned.

"Nothing herein is intended to suggest that any individual member may not at any time present to the Secretary or the Director a request that he submit a matter to the council or approve any matter for consideration by the council."

To the end that difficulties of this nature may be avoided, it was recommended that the council as such discuss no matters until they have been passed upon by the agenda committee, at least three of whose eleven members are to be attorneys-at-law who need not be members of the council.

The necessity for adopting a closely guarded procedure was emphasized in the report of the subcommittee on legal problems.

"Any group which is organized as the council has been organized, and which confines its activities to act as an advisor to government in the matter provided in Secretary Krug's letter, would not, in our opinion, be held in violation of the United States antitrust laws or in violation of similar state statutes," the report said. "Attorney General Clark apparently agrees with this view relative to the laws of the United States.

"The council must recognize, on the other hand, that:

"1. No legal opinion by the Attorney General, or anyone else, would consti-

tute a legal bar to any prosecution or civil suit.

"2. Unless precautions are taken, the activities of the council, even if confined to advising and informing the Secretary or the Director, might, when coupled with other individual and independent actions conforming to such advice or information, be claimed to constitute a violation of law.

"3. It is impossible to determine in advance the type and character of matters that may be presented to the council for consideration and the application of the antitrust laws with reference thereto.

"These three features make it highly desirable that the council act strictly in accordance with Secretary Krug's mentioned letter and with the continuing advice of competent legal counsel."

Two committees were staffed by the council, with temporary chairmen pending nominations for permanent officers, expected to be elected at the December meeting.

Hill Heads Agenda

The agenda committee will be headed by George A. Hill, Jr., Houston Oil Company, Houston, with the following members: A. Jacobsen, Amerada Petroleum Corporation, New York; W. S. Hallanan, Plymouth Oil Company, Charleston, W. Va.; J. Howard Marshall, Ashland Refining Company, Ashland, Ky.; B. A. Hardey, IPAA, Shreveport, La.; W. H. Ferguson, Continental Oil Company, Denver; R. G. Follis, Standard Oil Company of California, San Francisco; A. C. Mattei, Honolulu Oil Corporation, San Francisco; Gordon Duke, Southeastern Oil, Inc., Jacksonville; William R. Boyd, Jr., API, New York and Hines Baker, Humble Oil & Refining Company, Houston. Marshall and Baker are non-member attorneys.

The appointments committee will be headed by W. Alton Jones, Cities Service Oil Company, New York, with the following membership: B. Brewster Jennings, Socony-Vacuum Oil Company, New York; W. S. S. Rogers, The Texas Company, New York; Robert E. Wilson, Standard Oil Company (Indiana), Chicago; H. H. Thatcher, National Council of Independent Petroleum Association, Chattanooga; Jake Hamon, Cox and Hamon, Dallas; Charles F. Roeser, Roeser and Pendleton, Inc., Fort Worth; Henry D. Moyle, Wasatch Oil Refining Company, Salt Lake City; E. E. Pyles, Los Angeles, and Charles H. Jones, Richfield Oil Corporation, Los Angeles.

The major responsibility of the appointments committee will be to name subcommittees to undertake special projects approved by the agenda committee.

The first real business to come before the council was a letter from Ralph K. Davies, acting director of the OGD, suggesting a number of projects for immediate consideration.

Davies recommended six projects for council consideration, three of which were acted upon and approved immediately by the agenda committee.

To be instituted as soon as subcommittees are named by the appointments committee are studies of the shortage of pressure tank cars, the shortage of material affecting oil and natural gas, such as steel, and the new regulations under the recently revised Federal Leasing Act.

The three projects yet to be considered by the agenda committee call for the compilation of petroleum statistics on world-wide basis along the lines recommended by the PIWC; the accumulation of information regarding refinery capacity for aviation fuels, to be conducted in conjunction with the Bureau of Mines, on a request by the Army Air Technical Command, and a study of domestic reserves with special relation to continuing adequate supplies of petroleum, what the needs may be for imports, and the assurance of continued access to foreign sources, centralizing federal policy with regard to this matter.

The council plans to establish an office in Washington, to be headed by the secretary-treasurer.

The day following the council meeting, in Chicago, assistant Attorney General Wendell Berge, head of the antitrust division, told the National Oil Marketers Association that the Department of Justice believes industry groups such as the NPA can be "valuable sources of information and counsel" to the government in fields "so completely clothed with a public interest as oil" provided that all groups within the industry have equal opportunity and access to present their views.

Collyer Points to Price Differential in Rubber

American-made petroleum-base synthetic rubber now can be marketed—at a profit—at from 15 to 17 cents a pound, compared with the 25¾ cents which Far Eastern natural crude now costs the government laid down at New York, John L. Collyer, head of The B. F. Goodrich Company, said last week.

"The United States can now produce about 600,000 tons a year of the main type rubber at a plant cost of 12 cents a pound or less," he said. Including plant amortization, depreciation, distribution expense and return on capital invested, the price would be between 15 and 17 cents a pound.

Collyer admitted, however, that until crude and synthetic rubber can meet in outright competition it will be impossible to determine how preference for natural will stand up against an indicated differential of eight cents or more a pound in favor of the synthetic.

"Unquestionably the selling price of crude would come down to meet competition if necessary," he commented. Prewar natural rubber was laid down in New York by reasonably efficient producers at ten cents a pound, with a fair profit.

To permit competition he suggested that crude rubber be returned to a free-market basis so far as purchases by the U. S. are concerned at the expiration of the present buying arrangement next December 31, and that the government synthetic plants be sold or leased to private industry without delay.

The RFC has announced that it has entered into an agreement with the Netherlands government for the purchase of a minimum of 10,000 tons of Far East rubber at a price of 20¼ cents per pound for top grades F.O.B. Far Eastern Port, for delivery this year, this in addition to 25,000 tons purchased in June at a basic F.O.B. price of 23½ cents per pound.

API Outstanding Contribution Award

The American Petroleum Institute next year will initiate an annual award to be conferred upon the man or woman in the industry who makes the most outstanding contribution to the arts and sciences or administration of the peroleum industry.

The plan was developed at the meeting of the API board of directors in Washington September 25.

Each year, the outstanding contributor to advancement of the industry will receive the "American Petroleum Institute award for distinguished achievement," and a similar honor may be conferred from time to time upon persons outside the industry who have made such contributions. Either one or two awards, or none, may be made annually, as decided upon by a committee on awards. Presentations will be made by the presdient of the API at its annual meeting.

In addition to the medal of achievement, the committee was authorized to investigate and report to the board of directors on proposals from individuals and groups to endow or defray the expenses of other awards, lectures or scholarships relating to achievement in special fields within the industry.

Membership of the first committee on awards, appointed by President William R. Boyd, Jr., are John M. Lovejoy, Seaboard Oil Company of Delaware, New York, chairman; O. D. Donnell, Ohio Oil Company, Findlay, Ohio; R. Gwynn Follis, Standard Oil Company of California, San Francisco; B. Brewster Jennings, Socony-Vacuum Oil Company, New York; A. W. Peake, Standard Oil Company (Indiana), Chicago; Reese H. Taylor, Union Oil Company, Los Angeles; W. K. Warren, Warren Petroleum Company, Tulsa; H. C. Wiess, Humble Oil & Refining Company, Houston, and L. S. Wescoat, The Pure Oil Company, Chicago.

Unusual Order Applies to Stratton, Texas, Gas Area

An unusual order, which establishes a gas-oil ratio at solution point and requires all casinghead gas produced from the Bertram and Wardner sands of the Stratton field of Nueces, Jim Wells and Kleberg counties, Texas, to be returned to the crest of the gas cap of the two reservoirs, was issued last week by the Texas Railroad Commission.

In ordering oil produced from these reservoirs with a minimum gas-oil ratio and the return of all casinghead gas to the crest of the gas caps, it was the contention of the commission that uncontradicted testimony at a hearing had shown the greatest ultimate recovery of oil from the Bertram and Wardner sand reservoirs could be obtained only by maintaining pressure in the gas cap. The commission stated this would retard the evolution of the dissolved gas within the oil and also would sustain the production rate of the oil wells by maintaining the oil saturation in the oil column at high levels due to the oil being pushed down structure ahead of the gas.

A hearing on the order will be held in Austin October 4, and is expected to attract considerable attention.

Four solutions to the problem had been offered by operators: 1) that wells on the gas cap be permitted to produce more; 2) that a series of line wells be drilled to prevent a drainage sweep; 3) that the oil operators inject water down structure; and 4) that up-dip wells be allowed a higher gas-oil ratio.

The commission order, which instigates a six-months experimental program beginning October 1, ignores these proposals. It sets the gas-oil ratio limit for oil wells at 785 cubic feet per barrel of oil, and orders that daily oil allowable of wells with a higher ratio is to be limited to this volume of gas unless all gas produced in excess of 785 cubic feet a barrel is returned to the producing reservoir.

Gas wells located on 40-acre units will be allowed to produce and market for any legal use as a maximum the amount obtained by multiplying the allowable for a 40-acre unit oil well by 1785. If a gas well has more than 40 acres assigned to it, then it may produce that amount obtained by multiplying the monthly gas allowable for a 40-acre well by the quotient obtained by dividing the number of acres assigned to the well by 40. Not more than 640 acres may be assigned a gas well for allowable purposes.

The rules provide that gas wells connected to cycling plants may be produced on a net volumetric basis, securing credit for gas returned to the formation. No credit will be given for processing losses or plant operation. This must be absorbed by gas well allowables. In no event will a gas well be permitted to produce more than 25 percent of its open flow capacity.

Bottom-hole pressure tests and gas-oil ratio tests will be required quarterly.

INGA Annual Meeting Set Next Month in Fort Worth

The Independent Natural Gas Association of America will hold its 1946 annual meeting at Fort Worth November 22, John A. Ferguson, executive director, has announced.

Ferguson said the meeting will be the most important the association has ever held because of the Federal Power Commission's natural gas investigation, on which a preliminary report may then be available.

New directors and officers for the coming year also will be elected.

President E. Buddrus has announced appointment of committee chairmen of the Independent Natural Gas Association of America as follows: Nominating, William H. Wildes; legal, Mark Adams; research and engineering, F. S. Kelly, Jr.; reserves and statistics, William H. Wildes; transporters, D. A. Hulcy; producers, D. D. Harrington; royalty owners, Homer W. Long, and regulatory, A. B. Harper.

Full membership of the association's committee on time, place and arrangements for the annual meeting includes four members under the chairmanship of Joseph Bowes as follows: C. H. Zachry, E. C. Joullian, F. S. Kelly, Jr., and E. F. Schmidt.

Crude Oil Production in the United States

(Estimates compiled by THE OIL WEEKLY. All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED Sept. 28	Sept. 21
Alabama	1,050	1,050
Arkansas	73,300	73,900
California	870,200	874,300
Colorado	37,500	37,000
Florida	400	420
Illinois	209,000	205,300
Indiana	19,000	19,400
Kansas	276,000	277,800
Kentucky	31,100	31,000
Louisiana	390,900	391,100
North Louisiana	86,900	87,100
South Louisiana	304,000	304,000
Michigan	46,100	51,000
Mississippi	73,400	74,950
Missouri	100	100
Montana	24,500	25,150
Nebraska	700	700
New Mexico	99,850	99,900
New York	14,050	14,150
Ohio	8,100	7,950
Oklahoma	354,850	353,500
Pennsylvania	37,050	37,150
Tennessee	35	35
Texas	2,088,400	2,088,400
Tex. R. R. Comm. Districts:		
Dist. 1—S. Central	19,400	19,400
Dist. 2—Lwr. Gulf Coast	148,400	148,400
Dist. 3—Upr. Gulf Coast	464,850	464,850
Dist. 4—S. West	220,000	220,000
Dist. 5—E. Central	41,000	41,000
Dist. 6—E. Texas Field	396,000	396,000
Dist. 6—Rest of N. East	103,500	103,500
Dist. 7-B—W. Central	32,850	32,850
Dist. 7-C—West	27,200	27,200
Dist. 8—West	491,200	491,200
Dist. 9—N. Central	129,000	129,000
Dist. 10—Panhandle	85,000	85,000
West Virginia	8,250	8,550
Wyoming	108,900	110,050
Total United States	4,772,735	4,782,855

Total stocks, foreign and domestic September 21, as reported by the Bureau of Mines were 222,664,000 barrels.

William C. Kneale Becomes Texas Company Division Head

Ten changes in the producing department of The Texas Company, to become effective October 1, were announced by L. E. Barrows, manager of the producing department at Houston, as follows:

William C. Kneale, acting division manager, South Texas division with headquarters at Houston, will become division manager of the South Texas division.

L. T. Tighe, drilling superintendent, South Texas division, has been promoted to general superintendent of drilling and production in the South Texas division.

H. H. Arnold, Jr., will be advanced from general superintendent of producing operations in Illinois, with headquarters at Salem, Ill., to assistant division manager of the Oklahoma-Kansas-Illinois division with headquarters at Tulsa. Donald M. Rounds, district landman at Mattoon, Ill., will succeed Arnold as general superintendent in Illinois.

W. V. Vietti, while retaining his position as assistant to the manager of the producing department, also will take over the duties of manager of the newly-created gas division of the producing department with headquarters at Houston.

E. P. Hayes, division petroleum engineer in the South Texas division, is being promoted to the position of chief petroleum engineer of the producing department with headquarters Houston. W. F. Herbert, division petroleum engineer in the West Texas division at Fort Worth, is being transferred to Houston to succeed Hayes as division petroleum engineer in the South Texas division. Don L. Harlan, petroleum engineer at Houston, succeeds Herbert as division petroleum engineer in the West Texas division at Fort Worth.

A. W. Baucum, division petroleum engineer in the Oklahoma-Kansas-Illinois division, is being transferred from Tulsa to Houston as assistant division manager in the South Texas division. J. A. Bermingham, Jr., assistant division petroleum engineer at Tulsa, will succeed Baucum as division petroleum engineer in the Oklahoma-Kansas-Illinois division.

ASME Petroleum Meet

Approximately 400 engineers are expected to attend the annual conference on petroleum mechanical engineering to be held by the American Society of Mechanical Engineers October 7-9 in Tulsa. D. Robert Yarnell, president of ASME, will attend.

William Raisch, chairman, petroleum executive committee, ASME, is in charge of arrangements. Working with him are the following subchairmen: G. L. Kothny, production engineering; C. L. Pope, products application; E. W. Jacobson, transportation; Irving Taylor, refining; B. B. Morton, construction materials, and J. M. Sexton, manufacturers.

Senate War Investigating Committee Gets Tough With Army on Canol Job

The Senate War Investigating Committee last week showed its iron hand after three years of velvet-gloved effort to get the low-down on the Army's extravagant canol project from the joint chiefs of staff.

Called into session to hear Admiral Ernest J. King's rebuttal of criticism in its recently issued fifth annual report (THE OIL WEEKLY, September 9), the committee deferred acceptance of his statement, and instead questioned Colonel Andrew J. McFarland, secretary for the joint chiefs, as to why the Canol file, recently turned over to the committee, was still classified as secret, and wound up with a demand that it be declassified within 48 hours.

At the outset of the hearing, retiring Chairman James M. Mead of New York declared that if, as charged by King, the committee's report contained inaccuracies of fact, it was due to the consistent refusal of the joint chiefs to make information available. Even though the Canol file has finally been turned over to the committee, he pointed out, its classification as secret makes it impossible for the committee to use it in public hearings or in reports. "Until such time as facts are available we cannot get the final answer we have been seeking on the Canol project, and until such time as we can have a full and free disclosure I can't see where we will gain much by just receiving statements," Mead said.

Subpoena Required

McFarland, whom Mead disclosed had been "reluctant" to appear and did so only after being subpoenaed, said he could not speak for the joint chiefs of staff, but under questioning admitted that "in my opinion" there is nothing in the Canol file which should be classified as secret, although that file contained mention of other matters which should not be disclosed.

He explained that before the file could be declassified it would have to be studied by the Joint Security Committee and that no individual was authorized to make public any material whatever from the file so long as it was restricted. He expressed inability, accordingly, to explain how it was possible for King to include in his statement the complete text of a letter from the file.

McFarland said the Canol file was complete, but again admitted that the letter from King to the joint chiefs, asking permission to incorporate material from the file in his statement, was not filed under "Canol" but with other correspondence to the former fleet admiral, bringing from the committee a demand that it be permitted to look over all files of the joint chiefs to see how much other Canol material was similarly filed.

McFarland sought consistently to dodge committee questions, finally causing Senator Harley M. Kilgore of West Virginia, who suceeds Mead as chairman, to say this was the most "evasive" hearing he had ever attended, and finally leading all members present to the unanimous conclusion that it was fruitless to attempt to investigate the matter until the joint chiefs file had been declassified.

Committee members, referring to the statement which King was not given an opportunity to present, pointed out that while he contended the charge that his position on the project differed from that of late Secretary of the Navy Knox was unfounded, there was information in committee files to show that Knox was not sold on Canol.

Much of the discussion surrounded the inclusion in King's statement of a "chronology" of the joint chiefs, action on the project and several letters between them and the committee, including the one on which McFarland was questioned.

That letter, written to Senator Truman, then head of the committee, on December 11, 1943, reported that the joint chiefs of staff had approved the projects on October 26, 1943, on the basis of a report of the Joint Production Survey Committee which concluded "that the completion and operation of the project are necessary to the war effort and recommended that the project be completed and operated as soon as practicable, and that consideration be given to exploitations and developments leading to a full recovery of the predicted reserves."

To Name Field Chairman of Engineering Association

Ernie Miller, Tide Water Associated Oil Company, Houston, has been named chairman of a committee appointed to select a successor to R. R. Kyner as field chairman of the East Texas Engineering Association.

Other members of the committee are: J. M. Cooper, Gulf Oil Corporation, Houston; L. F. Peterson, Stanolind Oil & Gas Company, Fort Worth; R. M. Hess, Shell Oil Company, Kilgore, and A. S. Rhea, Sun Oil Company, Dallas. The last two will serve as ex-officio members.

Would Hike Allowable

Rep. Frank Carlson, Republican nominee for governor, urged the Kansas Corporation Commission to establish a 25-barrel per well minimum daily allowable and declared that this will encourage the search for new oil and prolong the life of present producing fields. Kansas operated on a 25-barrel minimum during the war. Carlson declared that the 25-barrel minimum "will eliminate the premature abandonment of many Kansas wells.

Little Relief Is Seen On Shortage of Tank-Cars

Representatives of federal agencies and tank-car using industries, meeting last week to discuss the situation created by the Army's decision to recall cars now being used for the hauling of liquefied petroleum gases, chemicals and other commodities, for use in its fertilizer program, found little that the government could do to relieve the situation, but suggested that ODT consider revival of a wartime order eliminating cross-hauling. The most promising factor was a report that deliveries of new tank cars by manufacturers may start next month, rather than in January when originally scheduled.

Army representatives disclosed that it is not planned to withdraw cars in wholesale lots but at the rate of a few cars a month as they are needed. Withdrawals in the near future, they said, probably would exceed deliveries of new cars in replacements.

Control of Resources During War Favored by U. S. Navy

Over-all control of natural and manufacturing resources and manpower is seen by the Navy as the only way of supporting a war.

This was disclosed in a report on the methods of procuring supplies developed during World War II.

"When an emergency superimposes the demands of war upon the civilian economy . . . only a system for allocating materials will effectively direct production into the channels where the greatest needs exist."

Army-Navy competition for materials as well as military-civilian competition and competition between our needs and those of our allies also calls for such allocation, it was pointed out.

"Coordination of Army and Navy procurement cannot alone be expected to solve our nation's wartime problems," it was declared. "Over-all control of our resources, including a sound allocation system, also is essential."

Elliot Succeeds Parker in Standard Vacuum Listing

Philo W. Parker has been elected chairman of the board of Standard Vacuum Oil Company to succeed George S. Walden, retired. Parker enrolled in the first marketing class of Standard Oil Company in 1912 and became general manager of the South China area in 1926. He was made a director in 1931 and in 1933 was transferred to Standard Vacuum as a vice president.

Parker has been succeeded by Lloyd W. Elliott as president of Standard Vacuum. After serving with Carter Oil Company in Mexico and the Netherlands East Indies, Elliott was named acting general manager of Nederlandsche Koloniale Petroleum Maatschappij in 1928. He served on General MacArthur's staff during the war.

Other officers elected by Standard Vacuum were C. E. Meyer and C. K. Gamble, vice presidents.

Oil Weekly Representative Heads for Middle East

Henry Ozanne, Staff Writer for THE OIL WEEKLY in New York, will leave immediately for a nine months' tour of the Middle East oil region. He will visit Iran, Iraq, Saudi Arabia, Bahrein, Egypt and other oil producing sectors in that area and gather data for feature articles for THE OIL WEEKLY.

Henry Ozanne

Ozanne, a graduate of the University of Colorado and Columbia Graduate School, has engaged in newspaper and magazine work in Europe and the United States for 23 years. He has worked for newspapers in New York, Paris, Pittsburgh, Omaha, Denver and other cities.

In the petroleum trade press field he has worked for National Petroleum News and Oil & Gas Journal. He joined the editorial staff of THE OIL WEEKLY on January 1, 1946.

He has worked as a special writer for the Historians' Committee of the Petroleum Industry War Council, special writer for various oil companies' house organs and reports, and served as Director of Research for Petroleum Industry Research Foundation, Inc.

Ozanne is the author of "World Oil—Fact and Policy" (1944) and "U. S. Foreign Oil Policy" (1945).

Drilling Commences Under Slovak Oil Survey Plan

Drilling for oil under the new Slovak Oil Survey Scheme began early in August according to the Prague radio. Operations are being carried out with two modern rigs for which about $400,000 has been earmarked for 1946.

The areas of exploration are given as Cekule, Borsky Svaty Jan, and Malacky. Malacky is situated east of the river March (Morava) which divides Lower Austria from Slovakia and lies on the foothills of the Male Karpathy mountains. It is not far from the Gbely and Hodonin fields of Czechtslovakia and is in the region which forms the "Slovak continuation" of the Austrian region containing the Zistersdorf oil fields.

Labor and Material Limit Saudi Arabia Activities

Oil development in Saudi Arabia is being pushed as rapidly as possible, being limited only by labor and material, Philip McConnell, manager of the producing department of Arabian-American Oil Company, said last week.

McConnell, in the United States on vacation, will return to the Middle East the latter part of the year.

He said his company expected to have seven rigs active in Saudi Arabia before the end of the year. Much of the development is centered in the Abqaiq field which is 78 miles long and has two flank tests drilling about 4½ miles apart. One rig is active at Damman while drilling has not been resumed at Qatif and Abu Hadriya fields where single producers are located.

McConnell said the increased production in the Abqaiq field is necessitating the paralleling of the 40-mile, 12-inch carrier between the field and the Damman pipe line terminal. The new line is expected to be in operation by the end of the year.

W. H. Farrand, assistant to the manager of foreign operations, The Texas Company, will serve as McConnell's relief, and has already left his Los Angeles office for the Middle East. Previously he had spent several weeks touring the company's operations in South America.

Search for Oil in Spain To Be Greatly Accelerated

The search for oil in Spain will be boosted sharply during the next year, Manuel Serralta Benito, mining engineer of Madrid, said in Houston last week.

Benito, in charge of drilling and research for the Companiea Arrendataria del Monopolio de Petroleo Sociedad Anomima (CAMPSA) in Spain, is on a three-months' inspection tour of oil fields and drilling equipment in Texas. While in the United States Benito will place orders for two portable rigs to be used in the prospecting for oil in Spain.

CAMPSA, Benito explained, is a privately financed but government sponsored company and is the only company in Spain holding rights to produce oil. Other companies are prospecting for oil in Spain, Benito said, but in the event oil is discovered CAMPSA would operate the property.

Current prospecting in Spain centers around Burgos and Soria, north of Madrid. During the past year, CAMPSA has core drilled about 2000 feet in its search for oil in Spain. As yet no encouraging shows have been encountered.

Benito said CAMPSA plans to enlist two drillers and one engineer from either the United States or England to train native workers on the rigs.

Hungary Reports New Oil and Gas Deposits

Geological prospecting recently carried out in Hungary has resulted in the discovery of several new oil and natural gas deposits east of the Danube, according to the Swiss Neue Zurcher Zeitung.

The location of the new discoveries has not been disclosed but several years ago oil was found on the left bank of the Danube in various parts of Hungary.

International Guests

International guests at the September meeting of the Los Angeles Nomads included J. W. Bradbury, Mene Grande Oil Company, Caracas, Venezuela; Juan Pedretti, Union Oil Company, Paraguay; Bus Hayes, International Petroleum Company, Talara, Peru; and Pedro Abreu, Venezuelan consul, Los Angeles.

Suggests U. S. Salesmen In All Foreign Countries

The U. S., world's greatest industrial nation, should send salesmen to "see if we can't spread the benefits of our skill and ingenuity among the other people of the earth," Colonel Ernest O. Thompson, senior member of the Texas Railroad Commission, told the Houston Chapter of API September 24, 1946.

"Our industrial plant is capable of producing sufficient goods to meet our demands and those of other countries, and provide full employment," he said.

"This means buying power for the workers and lower prices resulting from competition," he continued. "Within a few years, we could meet the demands of this country for goods if full employment and capacity production were maintained. If we are to head off the otherwise certain depression, we must find world markets and outlets for our production here in America. Overseas veterans are aware of the needs of people in foreign countries. This need would be the outlet for our surplus goods in years to come when the home market has been supplied . . . thus maintaining full employment.

"How can these people pay for American goods? Every country has some raw materials that could be taken in exchange to feed our mighty industrial plant to make more goods. Countries surrounding the Persian Gulf want and need our goods, and they have plenty of raw materials with which to exchange. Peoples in these countries like the U. S. and our way of doing business, and they want our goods.

"About 87 percent of this oil is in the hands of American and British interests working in harmony to keep this valuable asset active toward peaceful goals. With the largest refinery in the world located at Abadan, fuel to power a war may be found there. If this oil were used to defeat us, and it is possible, then does that not give pause for thought?"

U. S. Deserts Britain on Roumanian Reparations

American oil companies with holdings in Roumania stand to recoup only one third of the damages sustained by their properties in that country during the war as a result of a tie vote on the question in the Paris Peace Conference in one of the few instances in which the U. S. has been aligned against Britain.

The vote, which necessitated referral of the matter to the conference authorities, came on a British proposal that Roumania be required to pay 100 percent compensation for damages to properties of allied nationals; annul the petroleum law of July, 1942, and re-enact the mining law of 1937 pending the adoption of a new petroleum law, and admit company officials and technical experts into the country to operate their wells.

Russia has consistently contended for one-third compensation, and the United states joined with the Slav bloc in voting on the question.

Eastern Indiana Facilities Expansion Asked of FPC

Eastern Indiana Gas Company, Indianapolis, has applied to FPC for permit to extend its facilities to near Muncie, Ind., to receive additional supplies of natural gas from Panhandle Eastern Pipe Line Company's 18-inch line extending across north-central Indiana. In addition, Eastern Indiana asked FPC to direct Panhandle to make the connection and furnish gas for distribution in Wayne, Rush and Henry counties, Indiana.

Facilities requested by Eastern Indiana include about 23 miles of 3-inch pipe line connecting with Panhandle's 18-inch line near Muncie. Cost is estimated at $83,812.

As an alternate to construction of this line, which will duplicate an existing 8-inch line owned and operated by Indiana Gas and Water Company to transport gas received from Panhandle, Eastern Indiana asked FPC to direct Indiana Gas and Water Company, if found to be a natural gas company, to deliver the necessary supplies of gas through their 8-inch line to Newcastle. Eastern Indiana would then construct 7 miles of line from Spiceland to Newcastle to receive the gas.

Pipe Lines Included in Wood River Refinery Deal

The Wood River Oil and Refining Company of Wichita, Kans., has bought the Rock Island Oil and Refining Company refinery and gathering system at Duncan, Okla. L. B. Simmons, organizer and president of Rock Island, will retire, but Dr. H. B. Alspaugh will continue as refinery manager, H. C. Allen will direct sales and the plant will continue as the Rock Island refinery.

The plant, located near Duncan, has a capacity of 8000 barrels daily, skimming and cracking. The gathering system includes about 250 miles of trunk and lateral lines tapping many pools in Southern Oklahoma.

Rock Island's refinery at Indianapolis, Ind., was not involved in the transaction.

Wood River operates a 16,000-barrel skimming and cracking plant at Hartford, Ill., and also owns and operates a river barge system on the Mississippi and Illinois rivers with a large terminal at St. Paul, Minn. The company is now building new terminals at Peru and Rockford, Ill., with pipelines connecting both terminals.

INGA to Intervene in Interstate Gas Decision

The Interstate Natural Gas Company and the Independent Natural Gas Association of America, the latter as intervenor, have filed petitions for a rehearing in the United States Circuit Court of Appeals for the Fifth Circuit in the case in which the Court upheld a Federal Power Commission decision that certain of Interstate's sales were subject to its jurisdiction.

Should the petitions for rehearing be denied, the company and the associations are prepared to take the case to the Supreme Court, officials have declared.

The case is one in which Interstate, which produces and purchases gas in Louisiana, gathers the gas within that state and sells it at the gathering termini in that state to three other interstate pipe line companies. The FPC held that this constitutes a sale in interstate commerce and ordered Interstate to reduce the price at which the company sells the gas to the three other companies.

Interstate and the association contend this is not a sale within the jurisdiction of the FPC. The Fifth Circuit Court, in a 2 to 1 decision, upheld the FPC.

Pipe Line Applications of Three Firms Consolidated

The Federal Power Commission has consolidated and set for hearing October 28 applications of Mid-Continent Gas Transmission Company, Cities Service Gas Company and Northern Natural Gas Company for construction of new lines and facilities.

Two of the applications cover proposed long distance lines, with Mid-Continent seeking authority to build parallel 26-inch, 400-mile main pipe lines from Liberal, Kan., to Kansas City, and a 436-mile 26-inch line from Kansas City to St. Paul, with three compressor stations and other equipment, at a cost of $78,853,500, and Cities Service applying for construction of a 405-mile 26-inch line from the Kansas portion of the Hugoton gas field to the Wichita and Kansas City areas at a cost of $23 million.

Northern Natural's application covered extensive additions to its system from Texas to South Dakota, including construction of about 150 miles of loop line, at a cost of $12,715,931.

Sinclair Plans for Texas Products Line Progress

Plans to construct a products pipe line from Corpus Christi, Texas, to Austin, Texas, by Sinclair Refining Company were definitely revealed last week when the company was granted permission by the Travis County (Austin) Commissioners Court to lay its lines under roads and highways of the county.

The line, costing an estimated $500,000, will have its terminal and tank farm at Austin.

The pipe line will run from Sinclair's refinery at Corpus Christi to Austin through Victoria and Caldwell counties. Just when actual construction will begin was not revealed.

Guymon Plant Sold

The Cabot Carbon Company, wartime operator of the government-owned carbon black plant at Guymon, Okla., has acquired the plant for $550,000. Salvage value of the plant was estimated at $50,000. Its monthly capacity is 1¼ million pounds of black, produced from 30 million cubic feet daily of gas from the Guymon-Hugoton gas field.

State Preference on FPC Procedure Asked

Operating under the revised procedure provided for by the new Administrative Procedure Act, the Federal Power Commission now is asking state commissions whether natural gas applications should be considered under the cooperative provisions of the commission's rules of practice and, if so, whether they desire a conference, the creation of a board, or a joint or concurrent hearing.

The first election of method was offered by the commission last week in announcing receipt of Ohio Fuel Gas Company's application for authorization to construct its Wellington storage pool as part of a $3,370,000 project to enable it to meet expanded demand.

The company proposed to use three separate pools in Lorain and Medina counties, Ohio, for gas storage, eventually to repressure them to the original rock pressure, giving them a calculated storage capacity of 6 million Mcf above remaining reserves.

Northern Natural Given Permit to Up Capacity

Northern Natural Gas Company has been authorized by the FPC to construct and operate six new natural gas pipe line compressor additions on its system north of Clifton, Kan.

The additions will boost the company's total pipe line capacity from 300 to 325 million cubic feet daily and the capacity into the Minneapolis-St. Paul, Minnesota, area, from 82 to 89.5 million cubic feet per day.

Facilities include one 1000-horsepower horizontal gas engine compressor unit at Sublette, Kan.; a 1000-horsepower unit at Clifton, Kan.; a 900-horsepower unit at Oakland, Iowa; and an 800-horsepower unit each at Ogden, Iowa, Hooper, Neb., and South Sioux City, Neb.

To Fight Reynosa Export Plan

Application of Reynosa Pipe Line Company for a certificate of convenience and necessity for its proposed line to export gas from Hidalgo County, Texas, to Monterrey, Mexico, will be opposed at the FPC's October 7 hearing in Washington by James D. Smullen, chief of the oil desk in the Texas Attorney General's department, who will appear at the Railroad Commission's request.

Smullen also plans an appeal from the FPC permit to export the gas which was given Reynosa. The appeal will be based in part on the fact that one of the witnesses at the prior hearings, who could have had information concerning gas supplies in Mexico, refused to testify on instructions from his employer—Petrolia Mexicana.

Louisiana Hearing

The Louisiana Conservation Commission will hold the statewide proration hearing to fix allowable for the 61 day period of November and December, at New Orleans, October 15.

Figure 1 (left). Constant-temperature baths and cells in which rates of corrosion of steel coupons are determined under pressure.

Figure 2 (right). Jars which contain the test solutions and the steel coupons for measuring rates of corrosion.

Sodium Chromate

AS A CORROSION INHIBITOR IN GAS-CONDENSATE WELLS

Part 1

By C. K. EILERTS, H. A. CARLSON, R. V. SMITH, F. G. ARCHER and V. L. BARR

CORROSION in gas-condensate wells is causing many serious industrial problems. To assist in finding an immediate means of controlling the losses of metal from high-pressure well equipment, the Bureau of Mines, in cooperation with the Natural Gasoline Association of America,[1] is following two principal lines of approach. They are: (1) A search for an inhibitor or treating agent that will prevent the corrosion of gas-condensate well equipment; and (2) the testing of alloys for resistance to the corrosive effects of the fluids from the wells now affected. This report deals primarily with the use of one inhibitor—sodium chromate.

Laboratory tests of the inhibiting value of sodium chromate in aqueous solutions of carbon dioxide, the fatty acids, and phenol all have indicated that it provides substantially complete protection to steel surfaces when used in practicable concentrations. Guided by information obtained in the laboratory, further tests of sodium chromate were made at gas-condensate wells affected by corrosion.

The tests in the Opelika, Texas, and Cotton Valley, Louisiana, fields have indicated consistently that iron in the effluent water and rates of coupon corrosion can be reduced to relatively low values by injecting sodium chromate into the flow stream. An important purpose as the tests are continued, is to determine how sodium chromate may be used to provide protection against corrosion without forming serious obstructions in the flowstring.

Corrosion-Test Equipment

The constant temperature baths and high-pressure cells shown in Figure 1 are used to measure corrosiveness in liquid mediums designed to have the characteristics of fluids found to be corrosive in certain gas-condensate wells. The six cells contain pint-size glass fruit jars, in which test coupons of steel and alloys are exposed to an atmosphere of carbon dioxide under a pressure of 200 pounds per square inch absolute. Racks attached to the outside of the cells hold jars containing coupons in corrosive mediums under a pressure of 15 psi abs. A cell so equipped is shown suspended by a chain hoist above the rear water bath. All the cells are mounted in the water baths at an angle (25 degrees from the vertical), and during the tests they are rotated at nine revolutions per minute. The test mediums in the jars, both inside and outside the cells, are stirred continuously by the movement of the rotating cells. The baths are heated electrically, and the temperature is maintained at 130° F. by means of electronic relay assemblies. A total of 42 specimens may be tested in separate jars of liquid mediums inside the cells, and 84 specimens may be tested in different mediums outside the cells. All of the jars either inside or outside the cells are beneath the surface of the water bath, and their contents do not come in contact with atmospheric oxygen during the exposure

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The accompanying article was presented as a paper before the Natural Gasoline Association of America annual meeting, Dallas, Texas, April 17, 1946. It is published by permission of the director of the U. S. Bureau of Mines, U. S. Department of Interior.

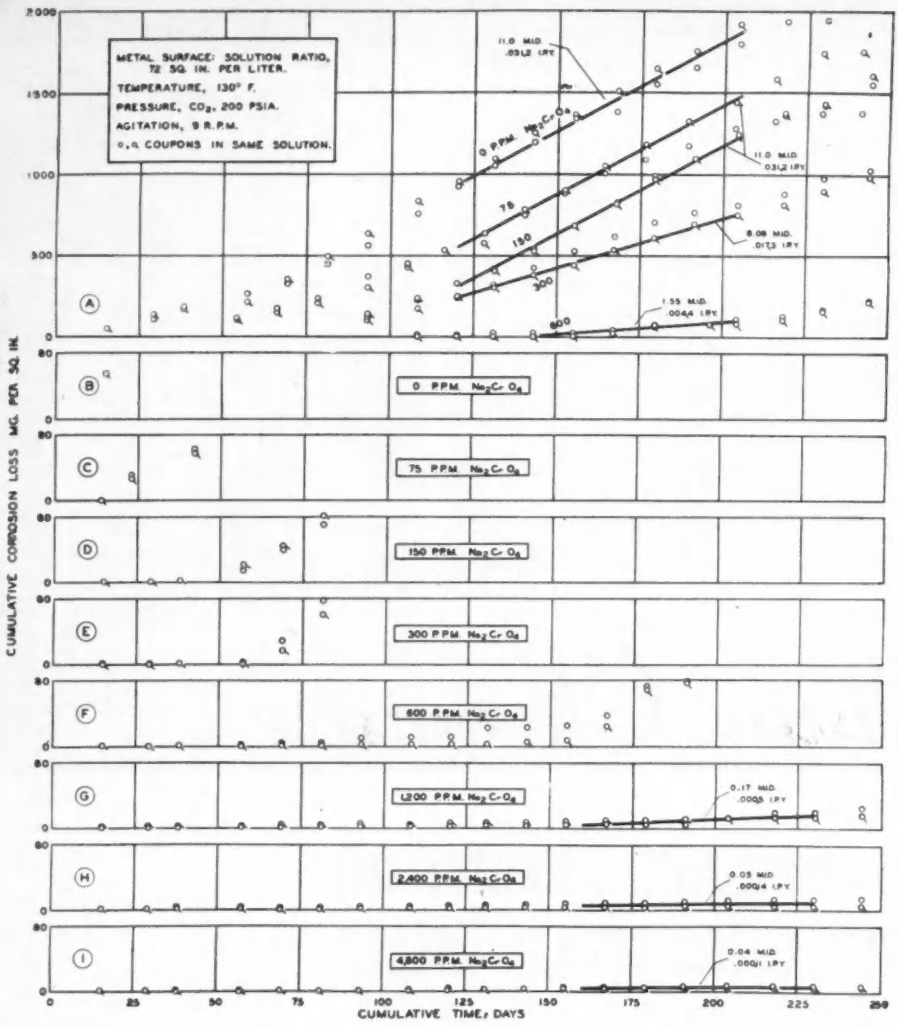
METAL SURFACE: SOLUTION RATIO, 72 SQ. IN. PER LITER.
TEMPERATURE, 130° F.
PRESSURE, CO_2, 200 PSIA.
AGITATION, 9 R.P.M.
A, a COUPONS IN SAME SOLUTION.
CUMULATIVE CORROSION LOSS MG. PER SQ. IN.
CUMULATIVE TIME, DAYS
0 PPM. $Na_2Cr_2O_4$
75 PPM. $Na_2Cr_2O_4$
150 PPM. $Na_2Cr_2O_4$
300 PPM. $Na_2Cr_2O_4$
600 PPM. $Na_2Cr_2O_4$
1,200 PPM. $Na_2Cr_2O_4$
2,400 PPM. $Na_2Cr_2O_4$
4,800 PPM. $Na_2Cr_2O_4$
11.0 MID. .031,2 IPY
8.08 MID. .017,3 IPY
1.55 MID. .004,4 IPY
0.17 MID. .000,5 IPY
0.05 MID. .000,4 IPY
0.04 MID. .000,1 IPY

Figure 3. Corrosion of SAE 1005 steel in aqueous solutions of carbon dioxide inhibited with sodium chromate at the indicated concentrations.

period, which usually is seven days or multiples thereof.

In Figure 2 one of the cells, with its full-opening top removed, is shown in a rack at the side of the bath. The seven jars on the channel iron support at the right of the open cell were removed from the cell. They contain solutions saturated with carbon dioxide that entered the jars under pressure through their loose-fitting lids. The jars in the metal racks encircling the cell contain solutions of fatty acids, phenol and other liquid mediums; the vapor space in each of these outer jars is filled with nitrogen, and the jar is sealed with a gasket.

The coupons in the jars are suspended from glass hooks and are free to swing as the cells revolve. The coupon in the right hand of the operator has a surface area of 5.0 square inches and is a size in common use. Corrosion products are removed from each coupon preparatory to weighing by immersing it in a hot, 10 percent solution of sulphuric acid. Loss of metal in the cleaning process is prevented by making the coupon a cathode in an electrolytic circuit with a lead plate the anode.

A volume of 400 cubic centimeters of corrosive solution is used in each jar. In some tests the solution is removed each time the coupon is cleaned and weighed. In other tests the same solution is used repeatedly.

Usually, the coupons are cleaned and weighed every seven days for as long as the tests are continued. The metal lost by corrosion during the successive exposure periods is designated "cumulative corrosion loss" for the total days of exposure. Corrosion in gas-condensate wells occurs on surfaces swept by turbulent, fast-moving fluids and it is believed that this laboratory method involving the frequent removal of corrosion products provides a satisfactory comparison of corrosive conditions and effects. It has the important advantage as to technique that each weight loss determination is comparable with all others of the test, and in addition, equipment for handling only one coupon is required.

Inhibitor Control of Carbonic Acid Corrosion

Rogers[2] and Jessen[3] have shown how carbon dioxide in gas-condensate fluids may form an aqueous solution of corrosive carbonic acid, H_2CO_3, which will attack steel surfaces and convert iron to soluble ferrous bicarbonate, $Fe(HCO_3)_2$. With a view to finding a practical inhibitor for the reaction, aqueous solutions of sodium chromate, $Na_2CrO_4 \cdot 4H_2O$, were prepared in the concentrations indicated in Figure 3 to serve as mediums in which coupons of steel could be exposed to unlimited supplies of pure carbon dioxide under a pressure of 200 psi. abs. Coupons having a surface area of 14.4 square inches were used in the tests, and two coupons were used in each jar of solution. Precautions were taken to avoid contaminating the solutions and the carbon dioxide gas with atmospheric oxygen, and after more than 250 days of testing, which involved opening the high-pressure cell 20 times, not one of the continuously used solutions had a trace of red color that would indicate the presence of oxidized iron. Some of the solutions become saturated with reaction products, and as the supply of carbon dioxide over the solutions in the cell was unlimited, a precipitate gradually accumulated in the bottom of the jars. The precipitate was identified by X-ray analysis to be essentially ferrous carbonate.

With reference to Figure 3, the cumulative corrosion losses from the coupons are plotted as ordinates against the cumulative times of exposure as abscissas. The slopes of the lines drawn through the data points are the measures of the rates of corrosion expressed in two units, milligrams per square inch per day (mid) and inches per year (ipy) of uniform penetration. Data that could not be plotted in sections B, C, D, E, and F of Figure 3, because of the limited ordinate scales, have been plotted in Section A, the respective solutions being designated on the slope lines.

Sections A and B of Figure 3 show that the coupons in distilled water containing no sodium chromate, corroded at the rate of 0.031,2 ipy. from the beginning of the test. Coupons in the 75 parts per million solution (Sections C and A) were protected for 14 days, and coupons in the 150 ppm. solution (Sections D and A) were protected for 35 days before they began to corrode. After corrosion started it progressed at substantially the same rates as for the coupons in distilled water. For the coupons in more concentrated solutions of sodium chromate (Sections E, F, G, H, and I), the time of total protection increased and rates of weight loss in the subsequent periods of corrosion decreased with increases in the concentration of the inhibitor. With a sodium chromate concentration of 1200 ppm. (0.42 pound per barrel of water) the rate of corrosion is negligible for an exposure period of 250 days.

Inhibitor Control of Fatty Acid and Phenol Corrosion Menaul[4] found fatty acids, including acetic and propionic acid, present in the water from gas-condensate wells that are subject to corrosion and suggested that the corrosion is the result of the formation of soluble ferrous salts by the action of the acids on the steel surfaces. Accordingly, aqueous solutions of formic ($HCOOH$), acetic (CH_3COOH), propionic (C_2H_5COOH), butyric (C_3H_7COOH), and valeric (C_4H_9COOH) acids were prepared in the concentration 200 ppm. to provide mediums for laboratory corrosion tests. Steel coupons then were exposed in these acid solutions and also in solutions containing the same concentration of acids to which sodium chromate had been added.

The results of the fatty acid corrosion tests are shown in Figures 4 and 5. The tests continued for 175 days and indicated that, of the acids tested, acetic acid was the most and valeric acid the least corrosive. Rates of corrosion of exposed coupons averaged 35 percent less in acid solutions containing

200 ppm of sodium chromate and 80 percent less in acid solutions to which 1000 ppm of sodium chromate had been added. A significant result of the tests is that for each acid solution containing 1000 ppm of sodium chromate, the rates of corrosion during the first 25 days of exposure were reduced to less than 0.000,5 ipy—an average reduction of 94 percent in the rate of corrosion.

The question arises as to what part of the reduction in the rates of corrosion was due to protection afforded by the chromate ion and what part was due to neutralization of the acids by reaction with the sodium chromate. The hydrogen ion concentrations of the solutions shown in Table 1 indicate that additions of sodium chromate decreased the acidity of the prepared solutions and that hydrogen ion concentrations in all solutions approached a neutral or basic value with cumulative exposure. Unlike the tests with carbon dioxide, the supply of corrosive agent in the tests with the acid solutions was limited. Acids were used in the test solutions in the average concentration (200 ppm) in which mixed fatty acids occur in the water from wells subject to corrosion. The acid in the test solutions may have been consumed, in the course of the tests, by reaction with the sodium chromate or with iron from the coupons. The important fact is that, as stated above, a concentration of 1000 ppm of sodium chromate (0.35 pound per barrel of water) in some way reduced the rates of corrosion by the acids to negligible values.

Inhibitor Control of Phenol Corrosion

It has been suggested that phenols are corrosive constituents of gas-condensate fluids; laboratory tests were made therefore of the corrosiveness of aqueous solutions of common phenol (C_6H_5OH) at two concentrations—200 and 400 ppm—as shown in Figure 6. It was found that the rate of corrosion in the more dilute solution was comparable with rates of corrosion in fatty acid solutions of the same concentration. The addition of 200 ppm of sodium chromate (0.07 pound per barrel of water) to phenol solutions of the concentrations used reduced the highest corrosion rate measured by 95 percent for a period exceeding 50 days. The addition of sodium chromate to the phenol solutions did not appreciably affect the hydrogen-ion concentration of either of them.

The laboratory tests of the inhibiting value of sodium chromate in aqueous solutions of carbon dioxide, fatty acids, and phenol indicated that substantially complete protection is provided steel surfaces for an exposure period of 15 and more days. As the time required for the liquid film on the interior of the tubing to move from the bottom to the top of the well is a matter of hours at the most, the protection afforded by a given concentration of sodium chromate would be expected to approximate that indicated at the beginning of the laboratory tests.

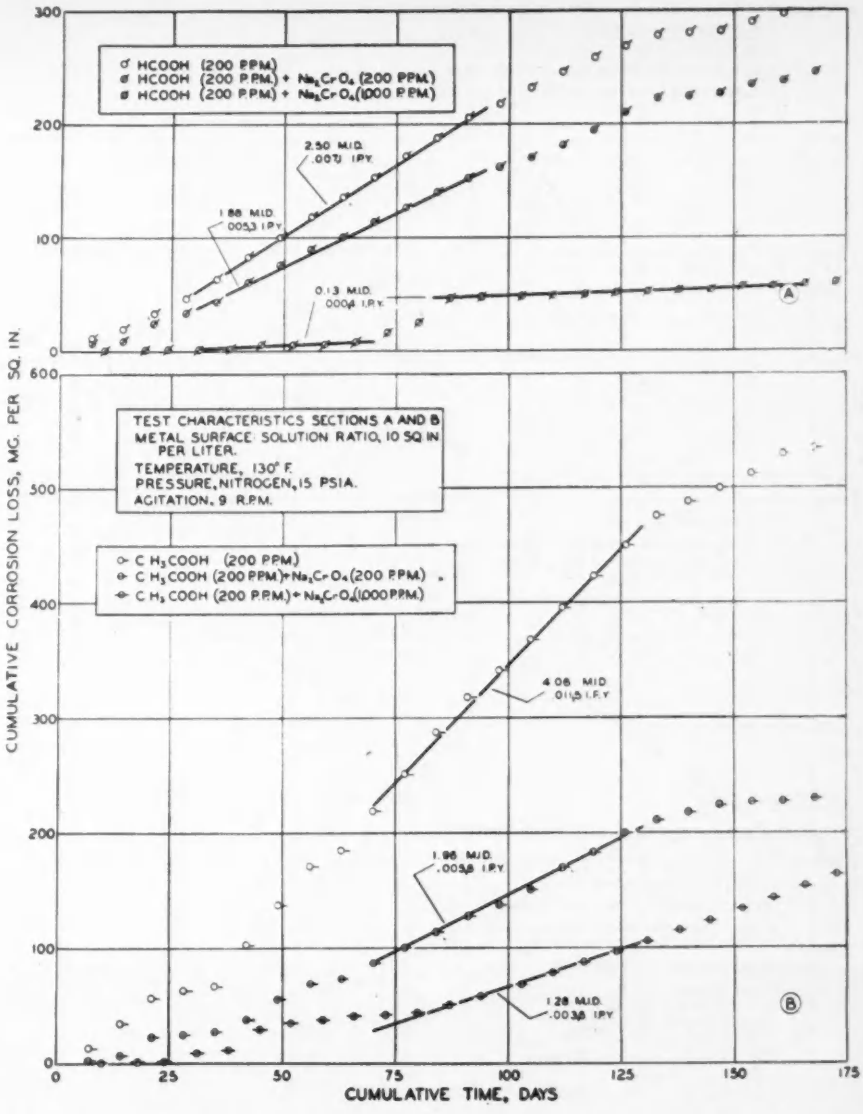

Figure 4. Corrosion of SAE 1005 steel in aqueous solutions of indicated fatty acids and also in acid solutions containing sodium chromate.

TABLE 1
Hydrogen-ion Concentration in the Fatty Acid Solutions

Acid and Concentration of Sodium Chromate, ppm	Hydrogen-ion Concentration (pH) after Indicated Period of Exposure, Days			
	0	7–10	24–28	91
Formic Acid:				
0	3.3	5.6	7.6	7.6
200	3.7	4.1	7.6	7.5
1,000	7.8	7.6	7.6	....
Acetic Acid:				
0	3.8	6.0	6.8	7.4
200	4.6	4.7	6.8	7.5
1,000	7.7	7.8	7.6	....
Propionic Acid:				
0	3.9	6.1	8.7	7.9
200	4.8	5.1	7.6	8.4
1,000	7.6	7.8	7.6	....
Butyric Acid:				
0	3.9	6.2	8.0	....
200	4.8	5.2	7.7	8.0
1,000	7.6	7.8	7.5	....
Valeric Acid:				
0	4.7	6.3	8.5	8.9
200	6.7	7.3	8.6	8.1
1,000	7.6	7.7	7.5	....

Note: Initial concentration of each acid was 200 ppm.

Effect of Sodium Chloride Concentrations on the Inhibiting Capacity of Sodium Chromate

Laboratory tests were made to determine whether sodium chloride in the absence of oxygen would adversely affect the corrosion inhibiting value of sodium chromate. Sodium chloride was introduced into propionic and carbonic acid test solutions in the concentrations indicated in Table 2 and carbon steel coupons were exposed in these solutions for periods up to 220 days with weighings at seven-day intervals. Corrosion rates in the propionic acid solutions (200 ppm), did not appear to

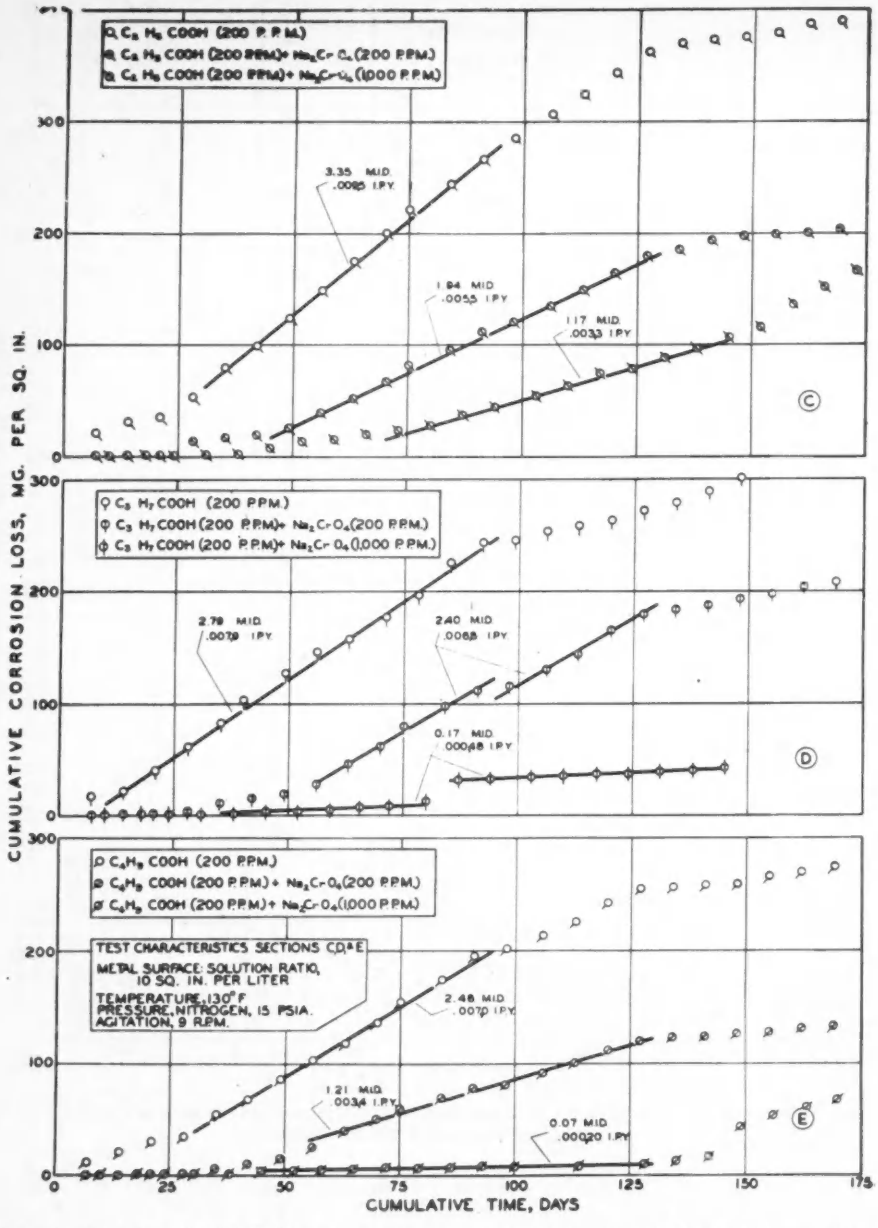
CUMULATIVE CORROSION LOSS, MG. PER SQ. IN.
CUMULATIVE TIME, DAYS
3.35 MID .0085 I.P.Y.
1.84 MID .0055 I.P.Y.
1.17 MID .0033 I.P.Y.
2.79 MID .0079 I.P.Y.
2.40 MID .0068 I.P.Y.
0.17 MID .00048 I.P.Y.
2.48 MID .0070 I.P.Y.
1.21 MID .0034 I.P.Y.
0.07 MID .00020 I.P.Y.
TEST CHARACTERISTICS SECTIONS C,D & E
METAL SURFACE: SOLUTION RATIO, 10 SQ. IN. PER LITER
TEMPERATURE, 130° F
PRESSURE, NITROGEN, 15 PSIA.
AGITATION, 9 R.P.M.

Figure 5. Corrosion of SAE 1005 steel in aqueous solutions of indicated fatty acids and also in acid solutions containing sodium chromate.

have varied with salt concentrations. Although sodium chromate in increased concentrations decreased the corrosiveness of the carbonic acid solutions, all of the measured corrosion rates were relatively low. Comparison of the data in Table 2 with those illustrated in Figures 3 and 5, indicate that dissolved salt decreased the rates of corrosion.

Corrosion Treatment at a Well in the Opelika Field

The first Bureau of Mines field test of the corrosion-inhibiting value of sodium chromate was made at a well in the Opelika field, Henderson County, Texas. The effects of corrosion were observed[5] in this field as early as September, 1942, and definite progress had been made in the technique of injecting solutions of materials, such as soda ash, Calgon and sodium dichromate, into the flow stream of wells by the time the Bureau test was begun in August, 1945.

The chemical feeder used at the well was especially assembled for the test by Black, Sivalls & Bryson, Inc., and appears in the right foreground of Figure 7. The pumping capacity of the feeder was approximately 50 gallons per day against a casinghead pressure of 2500 pounds per square inch. Gas to operate the diaphragm motor on the pump was taken from the tubinghead and passed through a trap before it entered the pump diaphragm assembly. To avoid stoppage of the gas supply line by frozen hydrates, the throttling valve for reducing pressure on the gas was located on the Christmas tree at a point where the fluid flowing from the well maintained the temperature of the valve at approximately 100° F. Gas in excess of the amount required to operate the pump was passed to a small flare through a back-pressure regulator.

Inhibitor solution was injected by the pump into the casinghead through check valves. The solution then flowed by gravity through the annular space between the casing and tubing to the entrance of the two-inch diameter tubing at a depth of 8178 feet. The tubing was suspended four feet above the cement casing plug in the well. The casing was perforated to allow entrance of fluid from two strata.

Samples of water flowing from the well with the hydrocarbon fluid were trapped in a two-inch diameter nipple extending downward from the flow line and could be withdrawn at the convenience of the operator. Carbon-steel coupons were exposed in the flow stream at a tee fitting in the Christmas tree to measure the corrosiveness of the flowing fluid.

Data obtained in the tests at the well are illustrated in Sections A to M inclusive of Figure 8. The rate of flow of gas from the well is shown for each day of the test in Section A. The rates of injection of the inhibitor solution, the concentrations of the solutions, and the rate of injection of sodium chromate in pounds per day are shown in Sections D and E. The weight of sodium chromate dissolved in the water that was produced with each million cubic feet of gas is indicated in Section M, and the concentration of sodium chromate in the water flowing from the well is shown in Section J. Although it was impossible to measure the volume of effluent water produced, it was estimated that a concentration of 500 ppm of sodium chromate in the water would correspond to a return of 0.2 pounds of chromate per million cubic feet of gas produced. Variations in other solids dissolved in the produced water are illustrated in Sections F, G, H and I. It is significant that total calcium and magnesium in the water averaged less than 10 ppm.

The extent of the corrosion control provided by the injection of sodium chromate into the flow stream was followed by measuring the iron content of the well water at the tubinghead and determining the rates of loss of weight of coupons exposed in the flow stream. A colorimetric analysis of the water was made in the field each day for iron (Section K), and the results were checked at frequent intervals by gravi-

TABLE 2

Effect of Sodium Chloride on the Inhibiting Value of Sodium Chromate in Acid Solutions at a Temperature of 130° F.

Concentration Sodium Chromate, ppm	Rates of Propionic Acid Corrosion (i.p.y.) with Indicated Concentrations of Sodium Chloride (ppm)			Rates of Carbonic Acid Corrosion (i.p.y.) with Indicated Concentrations of Sodium Chloride (ppm)		
	200	2,000	20,000	200	2,000	20,000
0	0.002,6	0.002,6	0.001,4	0.002,3	0.002,3	0.001,7
300	.001,2	.001,5	.000,8	.....	.....	.....
600	.001,3	.001,1	.000,9	.000,2	.001,8	.....
1,200	.001,2	.001,2	.001,0	.000,2	.000,9	.....
2,400	.001,2	.001,1	.001,0	.000,2	.000,2	.....
4,800	.000,4	.001,1	.000,8	.....	.000,2	.....

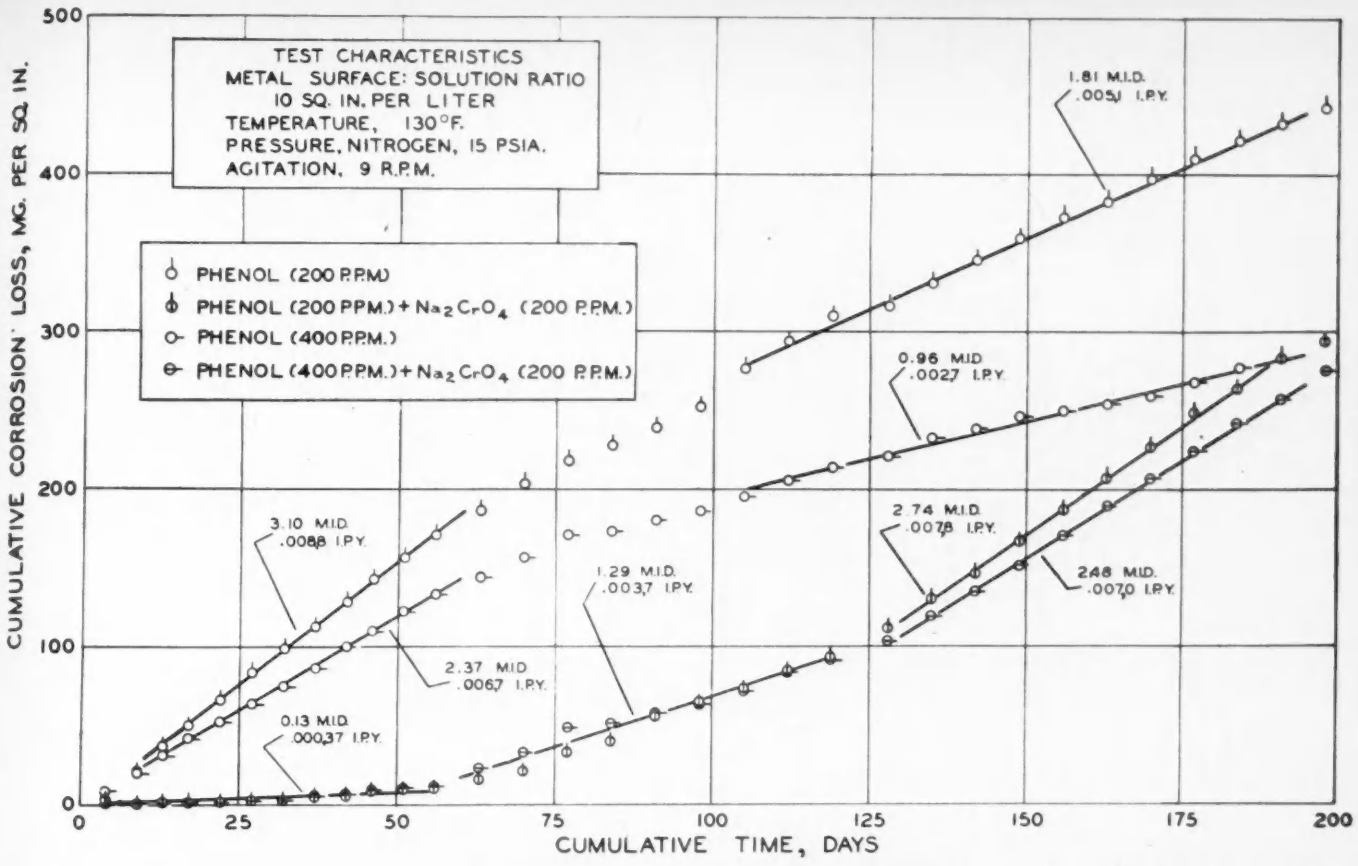

Figure 6. Corrosion of SAE 1005 steel in aqueous solutions of phenol and also phenol solutions containing sodium chromate.

metric analyses in the Bureau of Mines laboratory at Bartlesville. Coupons exposed for the intervals illustrated in Section L also were cleaned and weighed in the laboratory. These coupons were washed, dried and stored in a desiccator after being removed from the well, and were mailed to the laboratory in multiple paper wrappings.

In general, iron in the effluent water and rates of coupon corrosion were held low while sodium chromate was injected at such rates that appreciable concentrations were evident in the water. When the injection of sodium chromate was stopped, these measures of corrosion increased, indicating that sodium chromate has a definite inhibiting value. Iron concentrations as high as 70 ppm were measured in water from the well before the tests began but during the injection tests when sodium chromate was present in the water from the tubinghead, iron concentrations did not exceed 5 ppm and most of the time only traces were present. Rates of corrosion of coupons up to 0.045 ipy were measured at the well when sodium chromate was not being injected, but while sodium chromate was present in the tubinghead water, the rates of coupon corrosion averaged only 0.001,2 ipy and never exceeded 0.002,6 ipy.

Experience gained in treating wells in the Opelika field prior to the Bureau of Mines tests indicated that some treating agents tended to form obstructions in the flowstring. To determine if sodium chromate would behave in a like manner, the casinghead and tubinghead pressures were measured twice each day with a piston gage, and the rate of production was obtained simultaneously by means of an orifice meter so that the capacity of the tubing for conducting

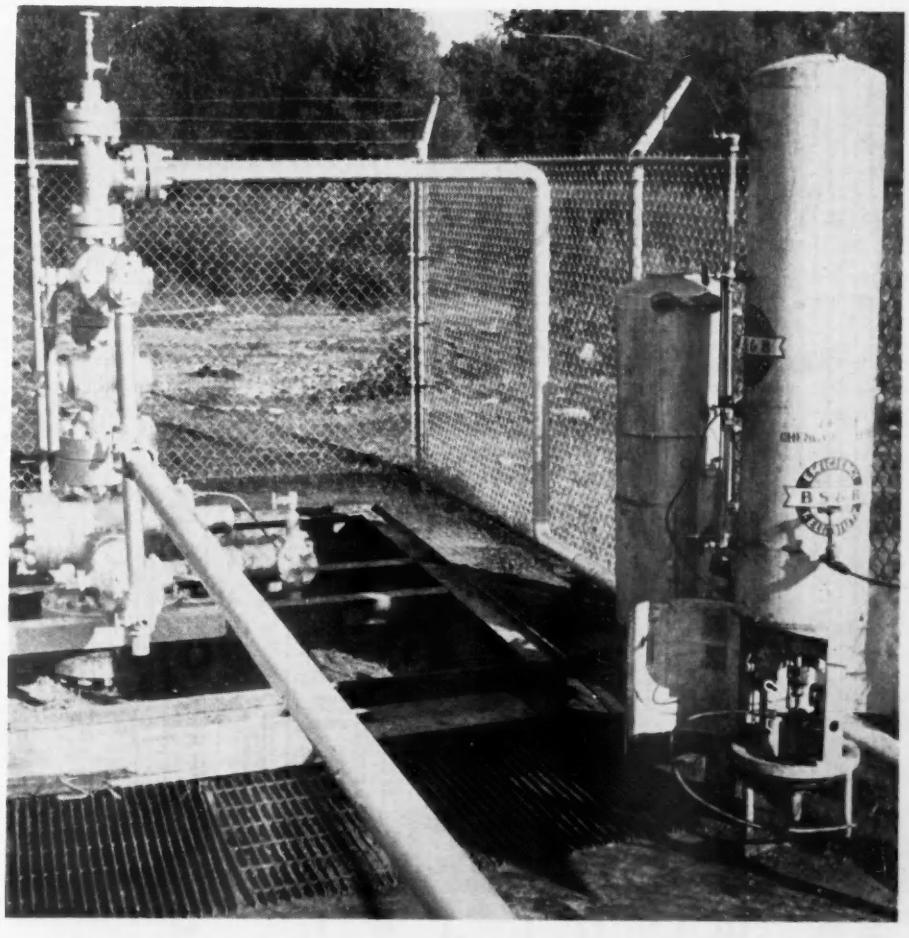

Figure 7. Chemical feeders used to inject sodium chromate solutions into a well in the Opelika field, Texas.

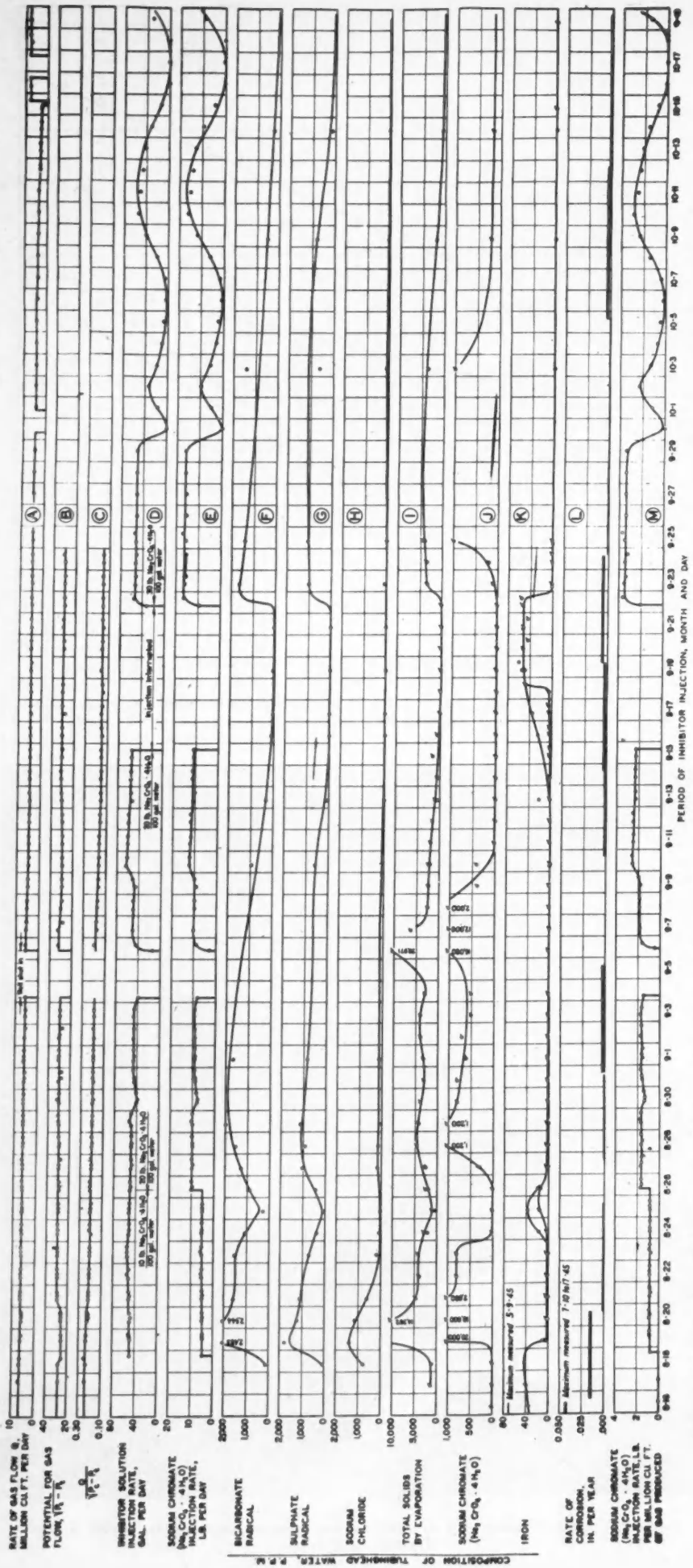
RATE OF GAS FLOW @, MILLION CU.FT. PER DAY
POTENTIAL FOR GAS FLOW, $\frac{Q}{\sqrt{P_c - P_t}}$
INHIBITOR SOLUTION INJECTION RATE, GAL. PER DAY
SODIUM CHROMATE ($Na_2CrO_4 \cdot 4H_2O$) INJECTION RATE, LB. PER DAY
BICARBONATE RADICAL
SULPHATE RADICAL
SODIUM CHLORIDE
TOTAL SOLIDS BY EVAPORATION
SODIUM CHROMATE ($Na_2CrO_4 \cdot 4H_2O$)
IRON
RATE OF CORROSION, IN. PER YEAR
SODIUM CHROMATE ($Na_2CrO_4 \cdot 4H_2O$) INJECTION RATE, LB. PER MILLION CU. FT. OF GAS PRODUCED
COMPOSITION OF TUBINGHEAD WATER, P.P.M.
PERIOD OF INHIBITOR INJECTION, MONTH AND DAY
Injection interrupted
Maximum measured 5-9-45
Maximum measured 7-10-45

Figure 8. Results obtained by the injection method of sodium chromate solutions into the flow stream of a gas-condensate well subject to corrosion, Opelika Field, Texas, 1945.

flowing fluid could be evaluated. A measure of the flow capacity of the tubing was obtained by means of the following function:

$$\frac{Q}{\sqrt{P_c - P_t}}$$

where Q = rate of gas flow, million cu. ft. per day,
P_c = casinghead pressure, lb. per sq. in.,
P_t = tubinghead pressure, lb. per sq. in.

In designing this function, accuracy was sacrificed to gain simplicity. Experience with it has indicated that, for a given obstruction in the tubing, the value of the formula is not constant and independent of flow as it should be and that it gives lower values at low rates of flow than at high rates of flow.

Flow capacities of the tubing (plotted in Section C, Figure 8) decreased while sodium chromate was being injected, which indicates that an obstruction was forming in the tubing. After the injection of sodium chromate was interrupted on September 15, computed values of the flow capacity of the tubing increased slightly. Bureau of Mines engineers were not present in the field to measure tubinghead and casinghead pressures after September 24, but the injection of sodium chromate was continued by the Lone Star Producing Company, and the rate of flow of gas (Section A) indicates that the obstruction in the tubing continued to form. On October 15 the well was acidized and, as indicated in Section A, the rate of flow of fluid from the well increased markedly on that date.

The tests in the Opelika field lasted approximately 60 days and showed that when two to three pounds of sodium chromate in solution is injected into the entrance of the tubing with each million cubic feet of gas produced, rates of corrosion of coupons and the amounts of iron in the effluent water are reduced to negligible values. It was not possible, however, to substantiate these evidences of the corrosion-inhibiting value of sodium chromate by inspection of the well equipment before and after the tests. The treatment with sodium chromate was accompanied by gradual formation of an obstruction in the tubing. The deposit that formed the obstruction was readily soluble in hydrochloric acid used to clean the well, but it probably was not a water-insoluble calcium or magnesium salt—less than 10 ppm of these elements were present in the water from the formation. The relation between flow rate and casinghead pressures did not change at any time during the test, and there was no indication that casing perforations were obstructed. It was evident throughout the tests that more water was needed to maintain a return of sodium chromate in the effluent water from the well than the minimum required to dissolve the sodium chromate injected.

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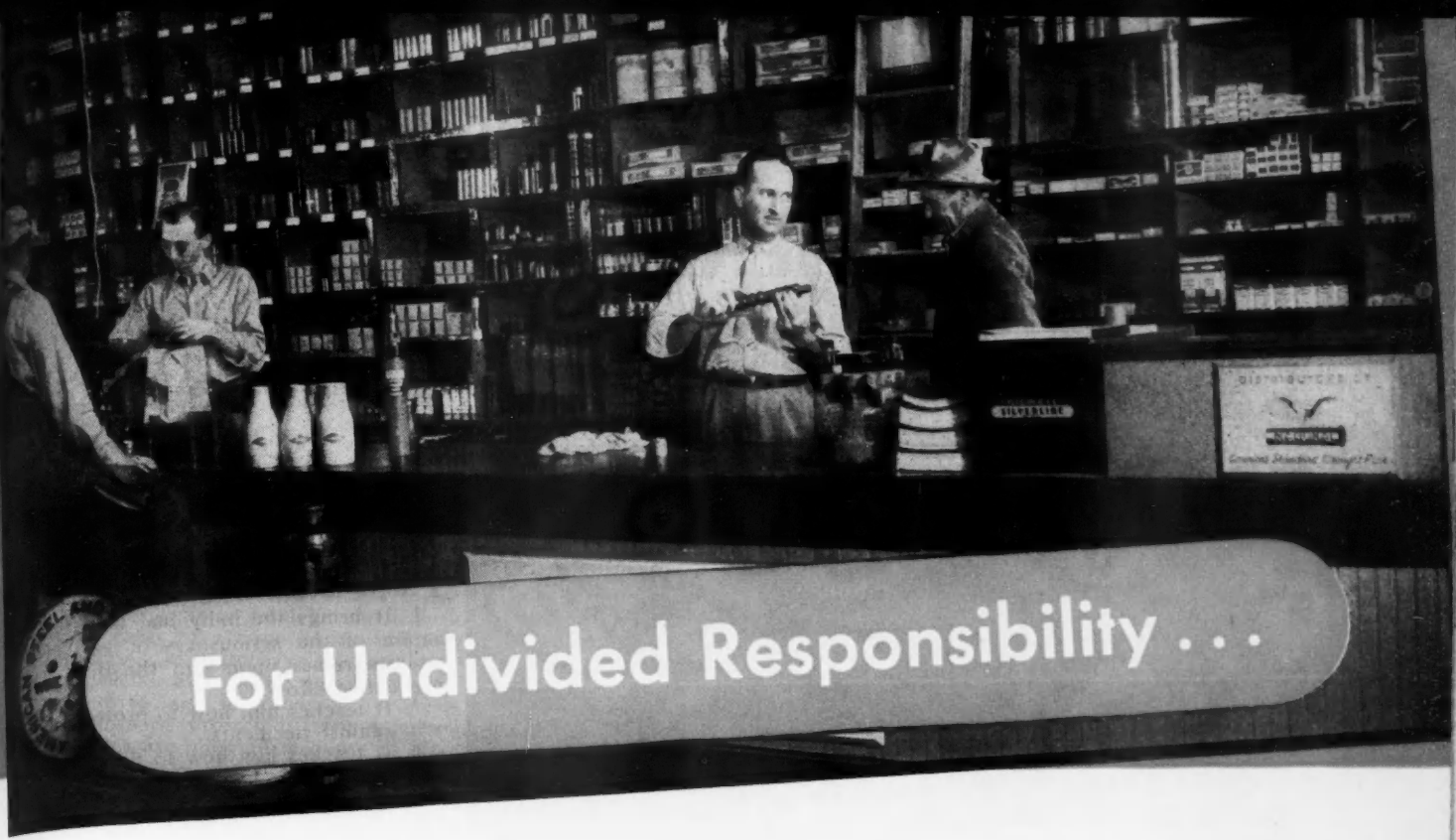

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UNITED STATES STEEL

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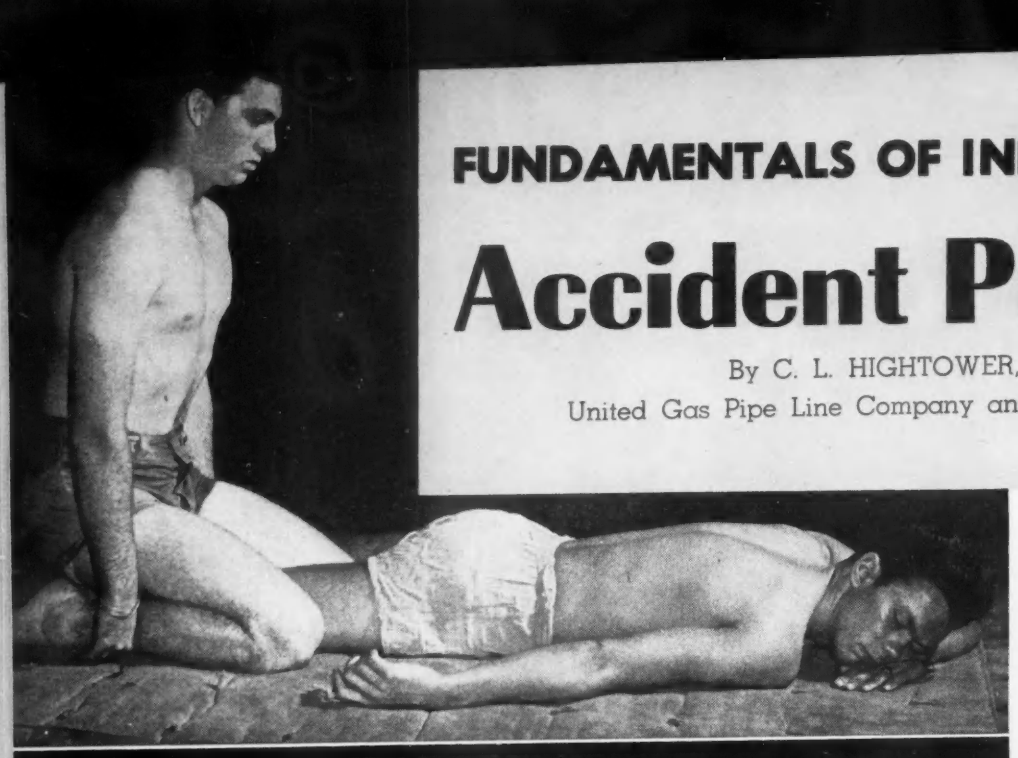
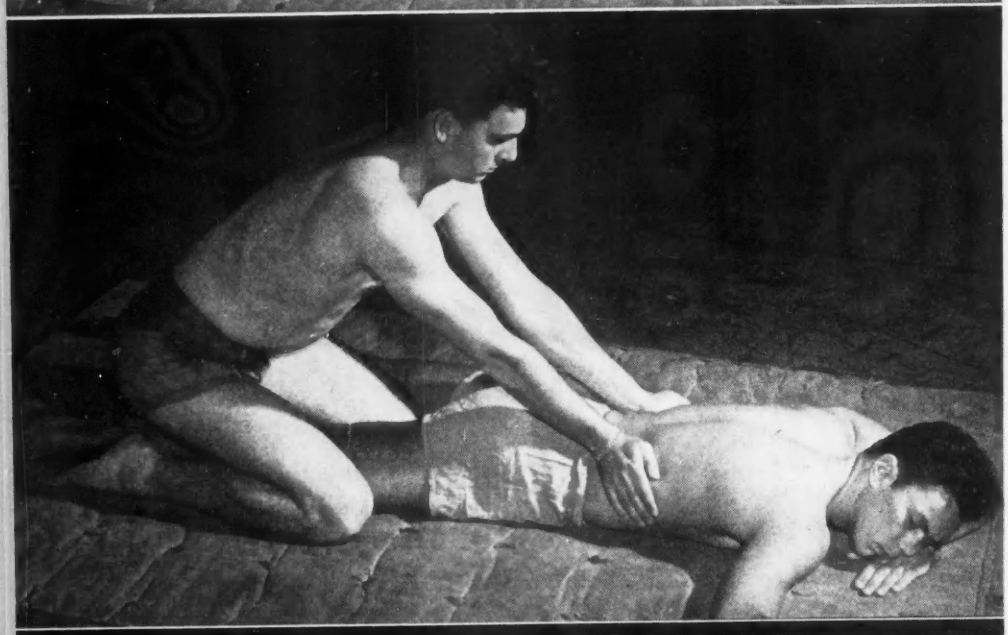
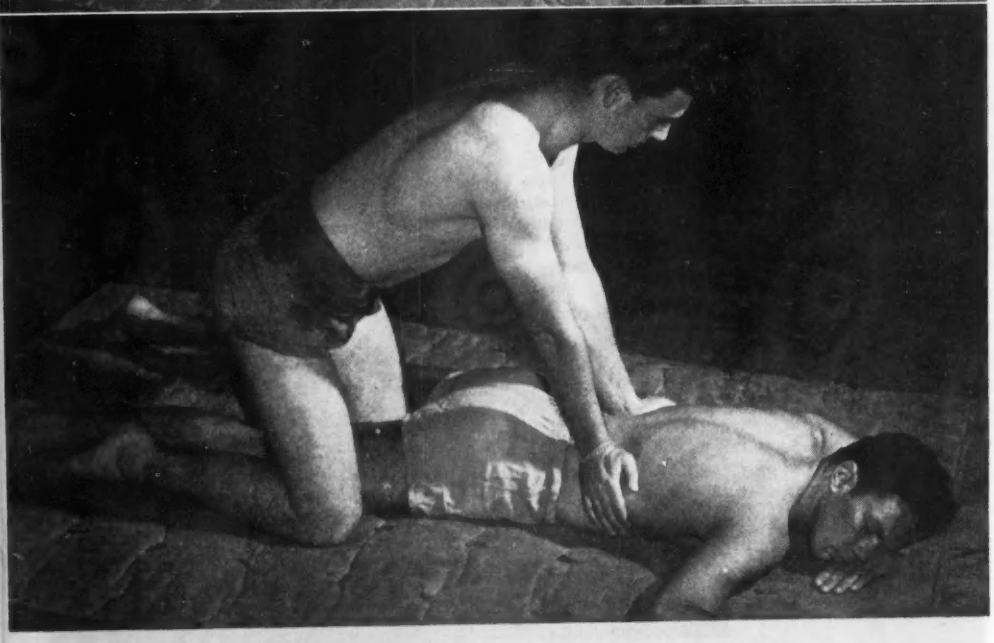
FUNDAMENTALS OF INDUSTRIAL

Accident Prevention

By C. L. HIGHTOWER, Safety Director,
United Gas Pipe Line Company and Union Producing Company







Artificial respiration, prone-pressure method: Top, patient prone, operator in position; Middle, inspiration; Lower, expiration. Note that arms are straight at end of expiration stroke to form vertical lines between shoulders and heel of hands.

Part 9

First-Aid Program

FIRST aid training accomplishes three specific things:

1. It brings the individual to a realization of the seriousness of accidents and impresses upon him the need for preventive effort.

2. It teaches him how to protect himself against accidents.

3. It teaches him how to diagnose an injury and properly treat it, thereby lessening the danger of infection and insuring that the accident victim will reach the physician in no worse condition than the accident left him.

It is impossible to measure the value of the first aid training program in dollars and cents but almost inevitably there is an improvement in the safety record of groups that complete the training, proving beyond the question of a doubt the effectiveness of the work.

A great deal of first aid training work is being done among industrial groups by the U. S. Bureau of Mines and the American Red Cross. The courses of the two agencies are very similar and both have competent trainers. The Bureau's work is confined to the mineral and allied industries while the Red Cross works with the general public as well as industrial groups.

Many companies have their own instructions and use the American Petroleum Institute course, which is based on the Bureau of Mines course but is shorter, or their own course developed from that of the Bureau and the Red Cross, or both. Quite often company training courses have been enlarged to include instruction on the use, care and maintenance of the safety devices and protective equipment common to their own operations and which employes are required to use from time to time in their work.

Where training work is done by company instructors, the employe is issued a company certificate on the completion of the course. The applicant is required to pass a written examination before becoming eligible for the certificate.

Discussion of prepared first aid questions at the monthly safety meetings, practice demonstrations by teams, and contests between teams from various departments are effective mediums for maintaining interest in first aid.

Figure 1 is a reproduction of first aid training certificate issued by one company.

First Aid Guide

The purpose of the First Aid Guide is to provide concise and specific information on the more important first aid problems in such form that they may

be easily referred to and understood. The outline may also be used by Safety Meeting groups or classes in the study of first aid principles and practices, for review work, or in conducting refresher courses.

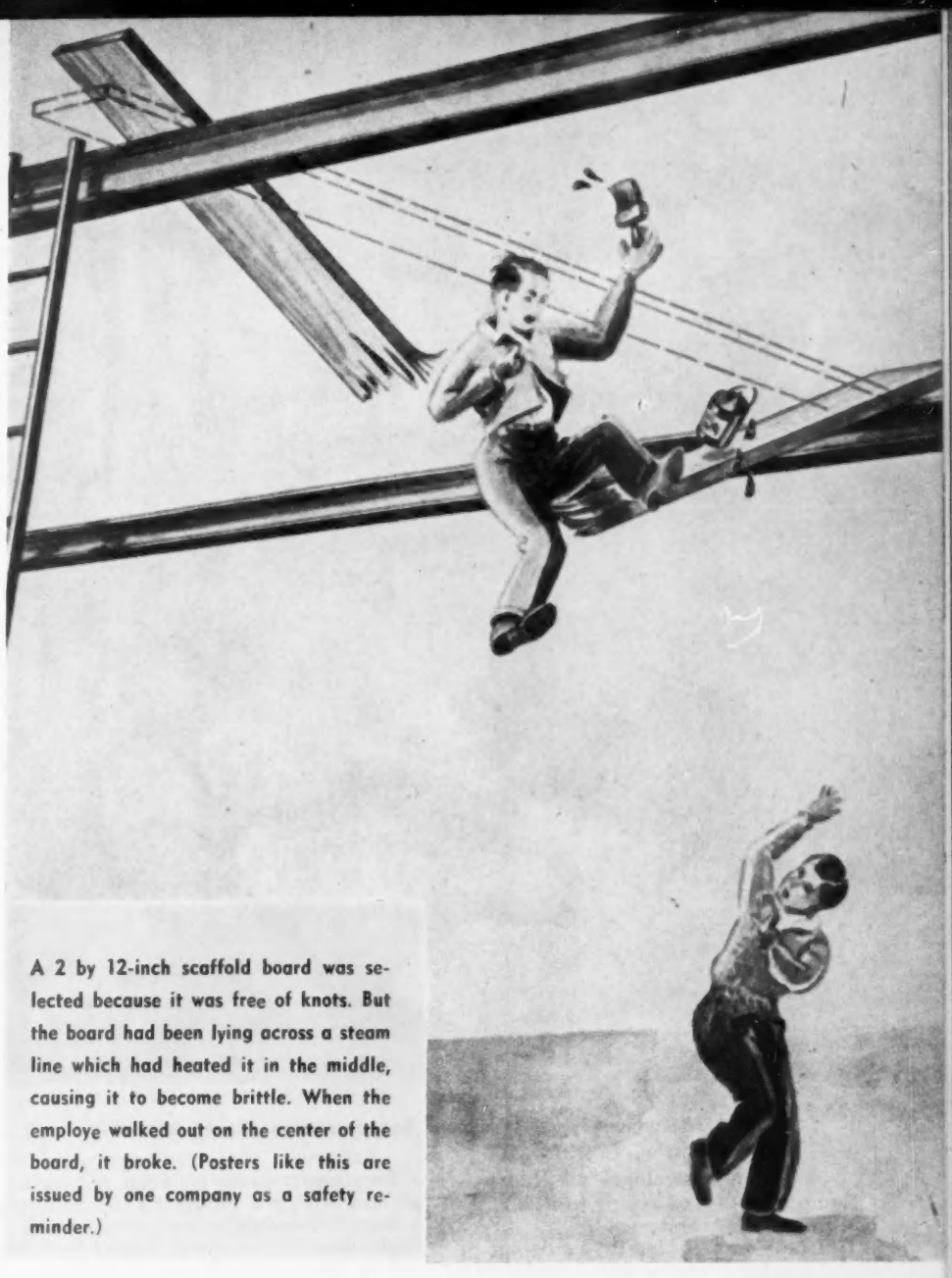
First aid is the emergency care of a person who is injured or ill, to prevent death or further injury, to relieve pain, and to counteract shock until medical aid can be obtained.

The imperative need of first aid for many injuries where medical aid is not immediately available makes it the duty of everyone to be able to render proper assistance until a doctor arrives or until the injured person can be taken to a doctor.

First aid is never taught for the purpose of replacing the physician or surgeon, but only to protect the patient until medical or surgical aid can be obtained. One of the first tenets taught first-aid men is to send for medical aid in all cases of serious injury and even in minor injuries to have the patient see a physician as soon as possible.

If first aid is rendered properly, wounds are protected from infection, fractures are immobilized, loss of blood usually can be checked, natural breathing may be restored in many instances, shock can be prevented or moderated, and pain lessened; thus the patient's strength is conserved; and when medical aid can be obtained, his chance of recovery is greatly enhanced.

The principal objects of first aid are: (1) Prevention of further injury; (2) checking conditions known to be endangering life; (3) protecting injuries from infection and complications; (4) making the patient as comfortable as possible to conserve his strength; and (5) where required, transportation to medical assistance in such a manner as not to complicate the injury or subject the patient to any more discomfort than is absolutely necessary.



A 2 by 12-inch scaffold board was selected because it was free of knots. But the board had been lying across a steam line which had heated it in the middle, causing it to become brittle. When the employe walked out on the center of the board, it broke. (Posters like this are issued by one company as a safety reminder.)

Remember

Keep patient lying down.
Be calm.
Locate all injuries.
Remove clothing when necessary.

Treat most dangerous conditions first, in following order:

1st—Serious bleeding.
2nd—Stoppage of breathing.
3rd—Poisoning.
Treat for shock.

Send for doctor or ambulance.

Do not move patient unless absolutely necessary.
Keep patient warm.
Keep bystanders away.
Try to ease patient; cheer him up.

Danger

Do not let bleeding go unchecked.
Do not neglect treatment for shock.
Do not give liquids to an unconscious person.
Release tourniquet every 15 or 20 minutes.
Avoid any possible further injury to patient.

Bleeding, Arterial

Symptoms: Bright red blood spurting from wound.

Treatment: Apply pressure with fingers or hand between wound and heart at the proper one of the six pressure points.

Apply tourniquet. Release every 15 to 20 minutes.

Danger: A tourniquet is a dangerous instrument—be sure to loosen it every 15 to 20 minutes. Tighten only until bleeding stops—too tight may cause injury.

Bleeding, Venous and Internal

Venous Bleeding

Symptoms: Dark red blood flowing steadily.

Apply pressure on edge of wound away from heart.

Treatment: Apply sterile compress firmly over wound and apply direct pressure.

Elevate bleeding part (except in case of fractured limb).

Loosen tight clothing from heart side of wound.

Do not allow blood clot to be broken.

If bleeding is severe, apply tourniquet on side of wound away from heart.

Release every 15 to 20 minutes.

Note: Venous bleeding usually can be controlled by placing a compress over the wound and bandaging snugly—then apply firm pressure with the hand directly over this until blood clots.

Bleeding, Internal

Symptoms: Restlessness, anxiety, thirst, faintness, pale face, sighing, weak rapid pulse.

Treatment: Send for physician at once.

Keep patient flat on back. Turn head to one side.
Keep patient quiet—do not move.
Keep patient warm.
Reassure patient.
No stimulants.

Burns

Symptoms: Reddening of skin, blistering or charring of tissues caused by heat (dry or moist), chemicals (acids or alkalis), or electricity.

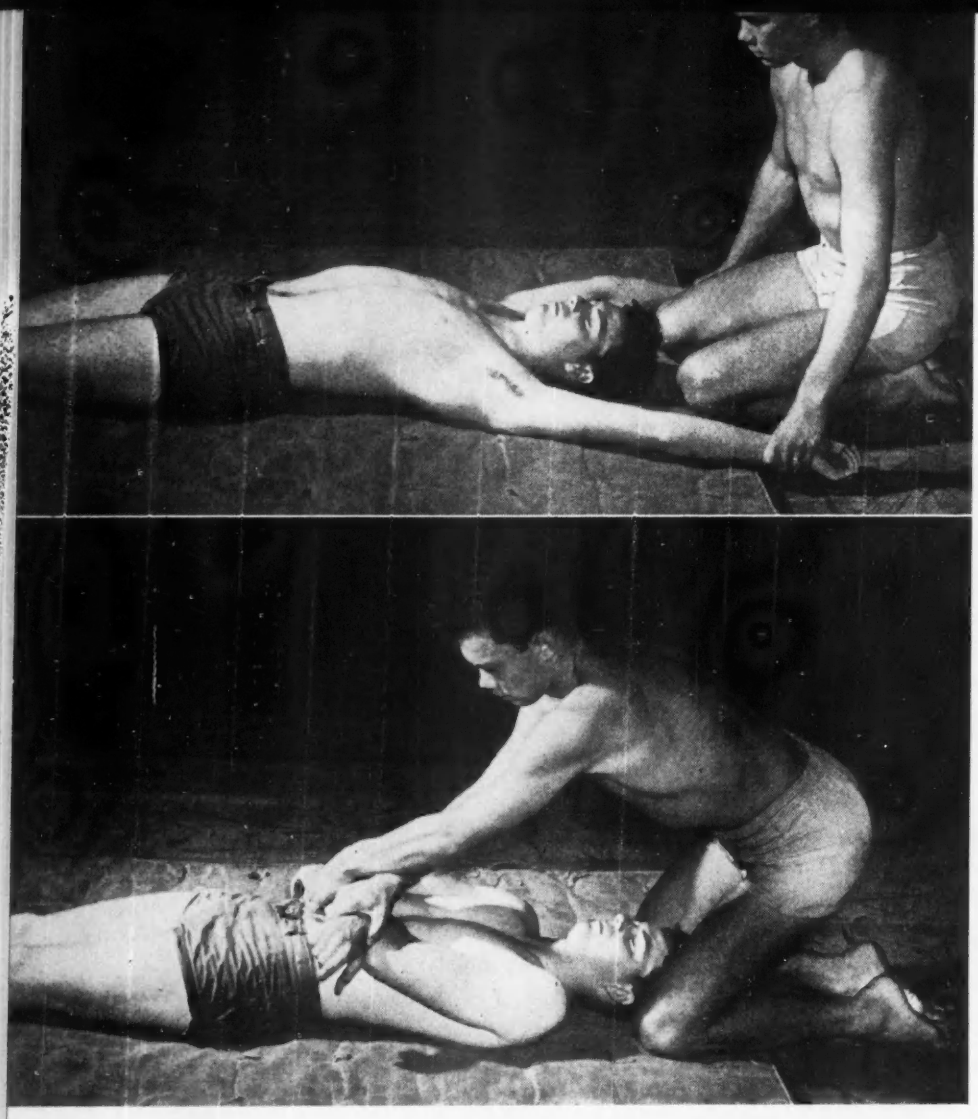
Treament: Slight burns—Cover with burn ointment to exclude air. Apply sterile gauze and bandage gently. (Chemical burns should first be flushed with water.)

Extensive Burns: Remove all loose clothing except where it sticks to skin.

Apply sterile gauze or cloth in warm baking soda solution (2 to 3 tablespoons to a quart).

Treat for shock.

Note: Do not apply iodine to burns.
Do not try to open blisters.
Do not apply absorbent cotton.



Artificial respiration, Sylvester method. Top, inspiration; Lower, expiration.

Drownings

Symptoms: Unconscious, not breathing, pulse weak, body cold.

Rescue: Use boat if available or throw life buoy, or use long plank, pole, or oar. Otherwise swim to victim and tow to safety. (Approach victim from rear to avoid stranglehold.)

Treatment: Start artificial respiration without losing a moment's time.
Keep patient warm.
Send for inhalator and medical aid.
Do not stop artificial respiration.
Keep patient lying down.

Important: Keep nose and mouth low—allow water to run out. Do not attempt to remove water by any other means, such as rolling over a barrel.

In rescuing, do not attempt to knock drowning victim out.

Electric Shock

Symptoms: Unconscious (blue or very white).
Breathing stopped.
Burn at point of contact.
Pulse weak or not present.
Body may be stiff or rigid.

Rescue: Turn off switch or have someone call power company to shut off current if possible.

In any event, rescue victim without delay.

Carefully insulate your feet by standing on rubber, dry board or other dry material.

Use long dry stick or rope to disengage victim from wire.

Treatment: Start artificial respiration without losing a moment's time.
Send for inhalator and medical aid.
Do not stop artificial respiration.
Disregard any stiffness of body—continue resuscitation.
After revival give treatment for burns.
Keep patient lying down.

Fainting

Symptoms: Dizziness.
Pale face.
Cold sweat.
Eyelids droop.
Breathing shallow.
Unconscious.

Treatment: Lower head or elevate limbs, keep patient lying down.
Loosen tight clothing.
Give stimulants (ammonia inhalant or smelling salts) or sprinkle cold water on face.
When conscious give stimulants by mouth.
If fainting is prolonged, apply external heat to body and call a doctor.

Fractured Skull

Symptoms: Must be treated for in all cases of injury to head caused by severe blow or fall resulting in unconsciousness (even though of short duration).
Look for bleeding from ears, eyes, nose.

Treatment: Keep patient lying down.
Elevate head (unless face is pale).
Dress injury.
No stimulants.
Keep patient warm.
Cold applications to head.

Danger: No stimulants.
Avoid all unnecessary handling of patient.
If necessary to move, do so very carefully, and only in lying position.

Fractures

Simple Fracture

Symptoms: Pain, tenderness at point of break.
Swelling.
Loss of motion in adjacent joints.
Compare with corresponding part on uninjured side.

Treatment: Avoid moving patient or injured part if possible. In removing or cutting away clothing or shoes, handle patient very carefully.
Send for physician.
Make patient comfortable.
Support limb above and below fracture.
Apply well-padded splints.
Treat for shock.

Danger: If fracture is suspected always treat as such.
Careful handling is necessary to prevent further injury.
Do not attempt to set a bone.
Do not move patient before splints have been applied.

Compound Fracture

Symptoms: Open wound, bleeding.
Bone may protrude.
Loss of motion in adjacent joints.
Pain, tenderness, swelling.
Compare with corresponding part or uninjured side.

Treatment: Treat for arterial bleeding if present. Even though not present, apply tourniquet loosely in position, ready to tighten if necessary.
Apply antiseptic on and around wound and to protruding end of bone.
Bandage.
Apply splints in line of deformity.
Do not straighten.
Send for physician.
Treat for shock.

Gas Poisoning

Monoxide (Illuminating, coal or exhaust)

Symptoms: Yawning, giddiness, weariness, ringing in ears, headache, nausea, fluttering of heart. Followed by unconsciousness (blue or cherry red).

Treatment: Take patient into fresh air as quickly as possible (not outdoors in cold weather).
Give artificial respiration when necessary.
Keep patient warm.
Send for inhalator and medical aid as soon as possible.
Do not stop artificial respiration.
Keep patient lying down.

Poison Gas

Treatment (General Rules): Act promptly and quietly; be calm.
Remove patient to clear air.
Have patient breathe through wet cloth or gas mask.
Keep patient at absolute rest. Loosen clothing.
Send for medical aid.
Do not permit patient to smoke.

Important: Sneezing and Tear Gases —Treat as above.
Paralyzing Gas—Immediate hospitalization indicated—give artificial respiration.
Choking Gas (lung irritant)—For lung irritants do not give artificial respiration.

Blister Gas (odor of garlic, horseradish, mustard, geranium)—Patient requires immediate decontamination and treatment. First-aider should protect himself and his clothing from contamination.

Heat Prostration

Heat Stroke (or sunstroke)

Important: Do not confuse this condition with heat exhaustion. (See below.)

Symptoms: Red face. No perspiration.
Skin hot and dry.
Pulse strong and rapid.
Breathing like snoring.
Unconsciousness.
Temperature high.
Usually begins with headache, dizziness, oppression and dryness of mouth and skin.

Treatment: Remove patient to cool place if possible. Remove clothing.
Lay on back, head and shoulders elevated.
Apply cold packs to head.
Wrap body in sheet and pour on cold water or place body in cool bath.
When conscious give cool drinks.
Rub limbs toward heart.
No stimulants.

Heat Exhaustion

Important: Do not confuse this condition with Heat Stroke (see above).

Symptoms: Pale face. Sweating.
Skin moist and cool.
Pulse weak. Breathing shallow.
Temperature low. Faintness.
Symptoms usually begin with dizziness, nausea and unsteadiness.

Treatment: Have patient lie down.
Keep him warm.
Give stimulants.
Give patient salt (half teaspoon at a time with water at frequent intervals until a tablespoon is given).

Shock

Symptoms: Face pale, dull, anxious.
Expression vacant, disinterested.
Eyelids droop.
Cold perspiration, forehead, palms of hands.
Skin cold and clammy.
Pulse weak and rapid.
Lips, fingernails, ears, bluish.
Breathing irregular, sighing gasping.
Chill, nausea, vomiting may be present.

Treatment: Lay patient on back on blanket, head low.
Keep patient warm with blankets, external heat.
Stimulants—aromatic spirits of ammonia (one teaspoon to glass of water, or give coffee or tea).

Danger: Shock is often cause of death—prompt treatment may save life.
Do not give stimulants in severe bleeding until checked.
Do not give stimulants in fractured skull or when face is red and pulse strong.

Suffocation (Asphyxiation)

Symptoms: Unconscious.
Breathing stopped.
Lips, ear lobes blue.

Treatment: Take victim into fresh air (not outdoors in cold weather).
Start artificial respiration without losing a moment's time.
Keep patient warm.
Send for inhalator and medical aid.
Do not stop artificial respiration.
Keep patient lying down.

Choking: Slap patient on back.
If patient is a child, hold upside down by heels, slap back.
Induce vomiting by finger in throat.
If choking continues, call a doctor.

Unconsciousness

Symptoms to look for:

Dangerous: Serious bleeding, stoppage of breathing, poisoning, heatstroke—Immediate first aid treatment required.

Red Face: Flushed, strong pulse. Elevate head slightly. Keep patient quiet. Loosen tight clothing, neck. Cold packs to head. No stimulants.

White Face: Weak pulse. Keep head low. Keep patient quiet. Apply external heat. Stimulants if no head injury or serious bleeding.

Bluish Face: Artificial respiration indicated.

Danger: No stimulants—Red face, skull fracture, concussion, heatstroke, fits.

Violent accidents—look for head injury.

Intoxication—look for other injury—treat for skull fracture or apoplexy if suspected.

Wounds

Symptoms: Break in skin, incised, lacerated, punctured, abraded or contused.

Treatment: When bleeding is not severe apply antiseptic on and around wound; cover with sterile compress and bandage. (If iodine is used, allow it to dry before bandaging.)

Instructor teaches first-aid principles to employes' children. In this way safety is carried into the home and onto the playground.

Number_____ Date_____

Certificate of First-Aid Training

COMPANY EMBLEM HERE

This is to Certify that

of

has completed the practical course of instruction in

FIRST-AID TO THE INJURED

Certified Approved Approved

_____ Instructor

_____ Safety Engineer

_____ Vice President

Figure 1. Reproduction of a first-aid training certificate issued by one company.

First-aid teams from about 12 major oil and gas companies compete in regional meets. Contests such as this are important in keeping up employes' interest in first-aid work and in preparing them for actual emergency work.

Wounds with severe bleeding (arterial or venous), apply pressure.

Important: See doctor on all puncture wounds. Give all wounds attention no matter how small.

Do not wash wounds with tap water. Use alcohol, benzine, etc., to remove grease.

Do not disturb blood clots.

Never use iodine near eyes or body cavities; never reapply it.

Never use adhesive tape or cotton directly on a wound; use a sterile compress.

First Aid Material for a Class of Twenty Men

1 Red Cross chart size 22 x 34 inches.
24 40-inch hemmed triangular bandages unsterile
12 3½-inch unsterile bandage compresses
6 2-inch unsterile bandage compresses
32 1-inch adhesive compresses
2 1-yard yellow gauze for burns
10 ampules ammonia inhalants
3 army blankets (single) dark color.

Splints

1 arm splint 15 x 4 x ¼ inches
1 forearm splint 18 x 4 x ¼ inches (Combine both above splints for L-shaped elbow splint)
1 straight arm splint 26 x 4 x ¼ inches
2 back splints 84 x 4 x 1 inches
3 back cross pieces 18 x 4 x 1 inches
1 pelvis board 84 x 12 x 1 inches
2 blocks 12 x 4 x 4 inches
1 thigh splint (outside) 60 x 4 x ¼ inches
1 thigh splint (inside) 36 x 4 x ¼ inches
2 leg splints 32 x 4 x ¼ inches
1 foot splint 15 x 4 x ¼ inches
2 ¾-inch pipe lengths, seven feet long (stretcher)
20 U. S. Bureau of Mines or Red Cross manuals.

First Aid Supplies

In field operations, and also in plants where the personnel is too small to justify a hospital or first aid dispensary, the operating personnel must be relied on to administer first aid treatment in injury cases. It becomes essential under such circumstances to provide first aid supplies suitable for the occasion and which can be safely used by first aid trained workmen or perhaps untrained laymen.

The unit or individual dressing type of first aid material has been adopted as standard by many companies. This particular type of dressing is adapted to both plant and field use as there is no waste or unsterile material to be returned to the first aid kit after an injury has been treated.

The type and size kit or case provided depends upon the location where it is to be placed and the number of men it is to serve.

The following list includes the more common types of unit kits available, and the number of employes each will serve is indicated:

Belt type—(combination first aid and snake bite kit) Protects 1 man.

No. 110: 10-unit (box type), protects up to 10 men.

Cylindrical: 10-unit (cylindrical type) protects up to 10 men.

No. 116: 16-unit (box type), protects up to 16 men.

No. 124: 24-unit (wall bracket type), protects up to 24 men.

No. 136: 36-unit (wall bracket type), protects up to 36 men.

The contents of the kit will vary not only in accordance with the size of the container but also according to the hazards of the job and types of injuries likely to occur. Several commonly used kit refills are given below:

Fill for 10-unit kit

10-unit kit empty
1 unit 2-inch bandage compress (4 per unit)
1 unit 1-inch adhesive compress (16 per unit)
1 unit ammonian inhalants (10 per unit)
1 unit triangular bandage (1 per unit)
1 unit burn dressing (2 ounces Foille)
1 unit eye dressing
1 unit adhesive tape (2 per unit)
1 unit merthiolate (1-10 cc. per unit)
1 unit sterile gauze pads (4 per unit)

Fill for 16-unit kit

16-unit kit empty
2 units 2-inch bandage compress (4 per unit)
3 units 1-inch adhesive compress (16 per unit)
1 unit ammonia inhalants (10 per unit)
1 unit triangular bandage (1 per unit)
1 unit 2-ounce Foille (1 per unit)
1 unit eye dressing (yellow oxide 2 percent)
1 unit adhesive tape (2 per unit)
1 unit merthiolate (1-10 cc. per unit)
1 unit sterile gauze pads (4 per unit)
1 unit snake bite kit.

Fill for cylindrical 10-unit kit

Cylindrical kit empty
Canvas rollup
1 unit 2-inch bandage compress (4 per unit)
2 units 1-inch adhesive compress (16 per unit)
1 unit ammonia inhalants (10 per unit)
1 unit triangular bandages (1 per unit)
1 unit eye dressing (yellow oxide 2 percent)
1 unit Foille (1-2-ounce per unit)
1 unit adhesive tape (2 per unit)
1 unit merthiolate (1-10 cc. per unit)
1 unit sterile gauze pads (4 per unit)

Fill for belt type combination kit

1 unit ammonia inhalants
6 units 1-inch adhesive compress
1 iodine swab
2 units 2-inch bandage compress
1 ⅛-ounce Foille
1 empty carrying case
1 snake bite kit
1 2 cc. merthiolate
1 No. 8 F. A. assortment box.

Fill for 24-unit kit

Kit empty
2 units 2-inch bandage compress (4 per unit)
5 units 1-inch adhesive compress (16 per unit)
2 units ammonia inhalants (10 per unit)
2 units triangular bandages (1 per unit)
2 units Foille (2 ounces per unit)
2 units eye dressing (yellow oxide 2 percent)
2 units adhesive tape (2 per unit)
1 unit merthiolate (2-10 cc. per unit)
2 unit gauze pads (4 per unit)
1 unit snake bite kit.

Fill for 36-unit kit

4 units 2-inch bandage compress (4 per unit)
9 units 1-inch adhesive compress (16 per unit)
3 units ammonia inhalants (10 per unit)
3 units triangular bandage (1 per unit)
2 units Foille (2 ounces per unit)
4 units eye dressing (yellow oxide 2 percent)
3 units adhesive tape (2 per unit)
1 unit merthiolate (2-10 cc. per unit)
3 units gauze pads (4 per unit)
1 unit snake bite kit.

Sucker Rod Scrapers Eliminate Paraffin

A novel method for the elimination of paraffin accumulation in pumping wells

By C. EARL BLACKBURN
Vice President, J. M. Huber Corporation

A NOVEL method for the elimination of paraffin accumulation in pumping wells has been developed by J. M. Huber Corporation, Borger, Texas. By use of this method the accumulation of paraffin is avoided by means of scrapers attached to the sucker rods which constantly wipe the tubing as the well is being pumped. This simple, inexpensive method of eliminating paraffin has been used by the Huber Corporation for several years and as materials have become available, other companies have also commenced using scrapers. The Huber Corporation now has scrapers in over 85 of its own wells and has equipped over 300 other companies' wells.

Simple to Operate

The patented scraper in principle and operation is very simple. In pumping wells having paraffin accumulation, the depth at which the paraffin commences to accumulate is determined and rods equipped with scrapers to cover this distance plus an additional 200 feet are installed. The rods with the attached scrapers are rotated a fraction of a revolution on each reciprocation of the rods by means of a rotating hanger. As the blades reach within a fraction of an inch of the tubing wall, the reciprocation and rotation of the blades prevent any paraffin from accumulating. This provides a mechanical method which requires no attention after installation as the action of preventing paraffin accumulation is automatic and continues as long as the well is pumped.

For two-inch tubing the scrapers are ⅛ inch thick by 1½ inches wide by 2 feet long and are shrunk-welded to a prefitted ring around the rod. The scraper blades are spaced two feet apart and six such blades are placed on each rod. As the rod string is rotated and reciprocated, the full tubing area is wiped of paraffin. For tubing larger than two-inch, proportionally wider blades are used.

Rotating Head Hanger

The sucker rods with the attached scrapers are rotated by means of a rotating head hanger attached to the bridle of the unit's or jack's head. The polish rod is held in place by means of case-hardened slips and jamnuts riding on top of a heavy duty thrust bearing which allows the rod load to revolve freely in the hanger. The constant turning of the rods is accomplished by means of ratchet levers, one holding as the other engages teeth on a horizontal table firmly attached to the polish rod below the rotating hanger. The ratchet lever engages the teeth on the table by means of a flexible steel cable running from the arm of the lever to a point on the jack's or unit's beam.

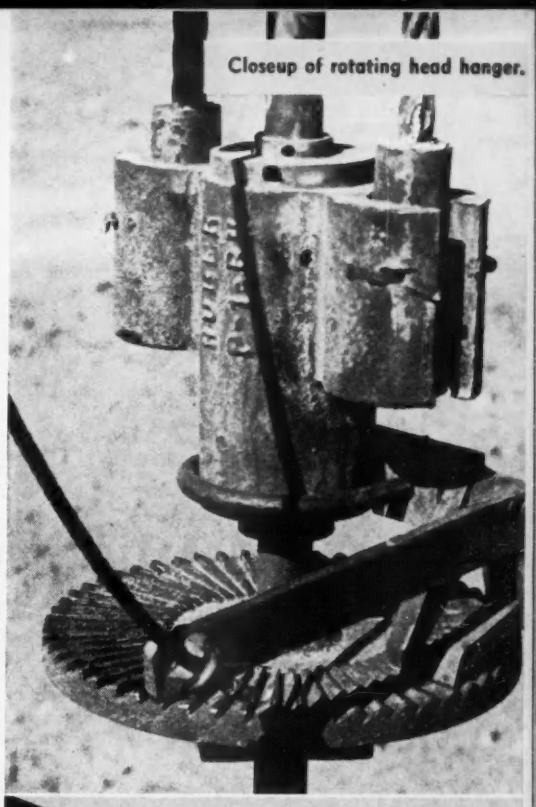
Results Satisfactory

In most Panhandle wells it is necessary to give attention to the removal of paraffin every week or ten days. The first set of these scrapers was installed in one of the Huber Corporation's Panhandle wells, which was then pumped for six months after the installation using no other method for combating paraffin accumulation. At the end of this period, the rods and tubing were pulled for inspection and there was no appreciable paraffin found on either the tubing or scrapers. On a trial basis several operators in the Panhandle have selected a problem well in which to install the scrapers and all of the operators have reported that very satisfactory results were obtained.

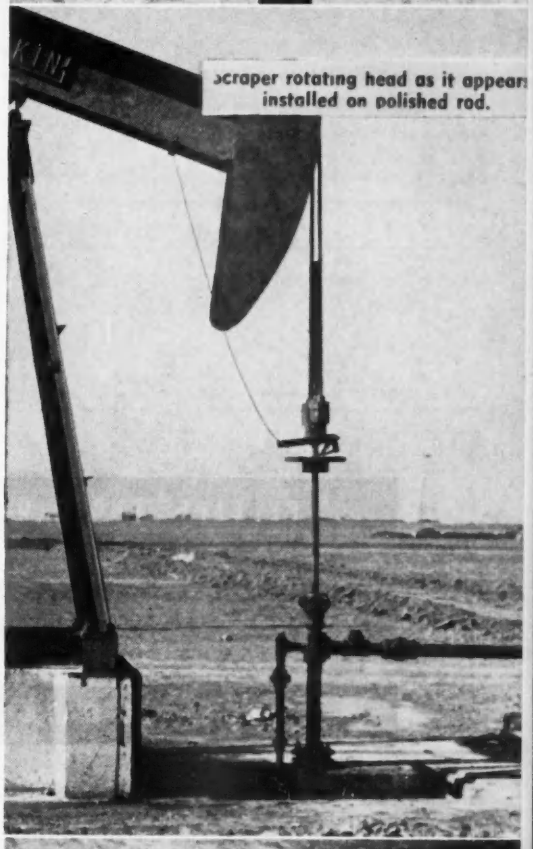
Widely Effective

Although this method of eliminating paraffin was developed in the Texas Panhandle and is now successfully being used there by many of the major and independent operators, it has also proven effective in other fields. The first set of Huber scrapers used in West Texas was installed in Honolulu Oil Corporation's No. 1-C Mallet in December, 1945, in the Slaughter field, Hockley County. After 45 days' use of the scrapered string or rods, the well was inspected and found to be completely free of paraffin, whereas previously the well had to be steamed every two weeks. At present there are more than 75 strings of scrapered rods being used in West Texas in the Wasson, Welch, Slaughter and Post fields. This method of eliminating paraffin is also being tested in several Mid-Continent fields that have excessive paraffin accumulation.

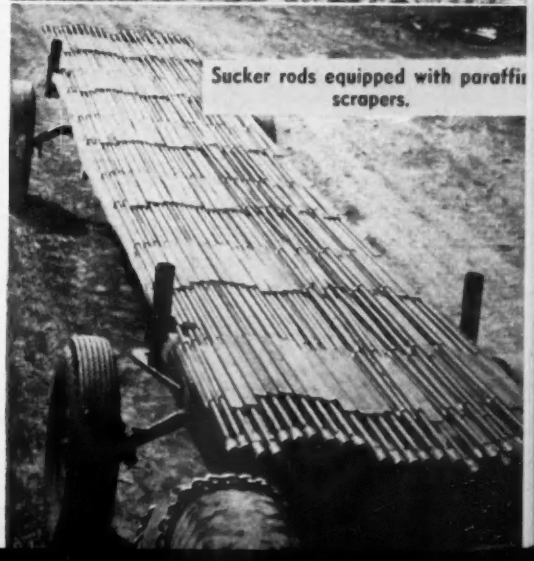
This inexpensive and positive method has solved the paraffin accumulation problem in a satisfactory manner. The cost of installation is reasonable and once a well is equipped with scrapers no further expense is incurred in preventing or eliminating paraffin accumulation as the operation of the scrapers is entirely mechanical.



Closeup of rotating head hanger.



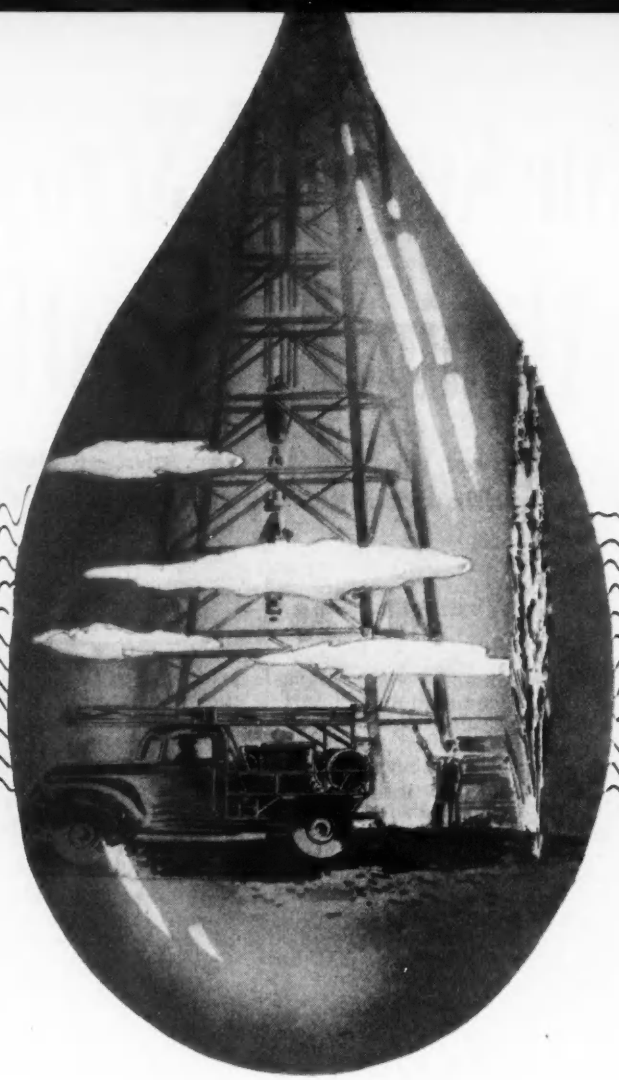
Scraper rotating head as it appears installed on polished rod.



Sucker rods equipped with paraffin scrapers.

Building Foundations for the

OIL INDUSTRY SKYLINE . . .



. . . BY EXPERIENCED CREWS

WITH MODERN EQUIPMENT

. . . ACCURATE DATA

● Accurate data . . . thoroughly compiled and correctly interpreted . . . by General has been the foundation for many towering oil industry skyscrapers. Operators have successfully relied on General to lead the way to their next discovery well . . . to approve or condemn acreage.

For more than a decade, dependable General crews have been accurately determining and locating conditions favorable to finding new oil. Accuracy has been characteristic of all General operations.

Today, General is better equipped than ever to serve. Crews are available for domestic and foreign work. Let them help build a dependable foundation for your next exploration program.

General
GEOPHYSICAL COMPANY HOUSTON

Wildcatting Keeps Pace With Record 1945 Total

SEARCH for new sources of oil and gas is being carried on at almost the same pace as that of last year, which made 1945 the peak year in exploratory drilling.

For the first eight months of this year the exploratory tests drilled total is almost identical to the figure for the comparable period of last year, but the remaining four months should see the current year take the lead and finish slightly ahead. The current program has received some impetus from the recent crude price increase, but is being hindered in some sectors by shortages of tubing and drilling muds, the latter being caused by transportation difficulties. Although exploratory activity during the two like periods has been the same, this year's holds some advantage in the ratio of producing wells to dry holes.

This year there have been 2904 exploratory completions compared with 2905 for the same months of last year. However, this year has enjoyed a slightly higher success ratio, it being 20.5 percent productive against 18.3 percent for last year's period. Total productive wells for this year against last are 594 and 532, respectively.

This year has netted 328 new sources of oil against last year's 303, an increase of 8.3 percent. These oil finds compared with the previous year's are 194 new fields against 208, and 134 new pay horizons in existing fields against 95. Major

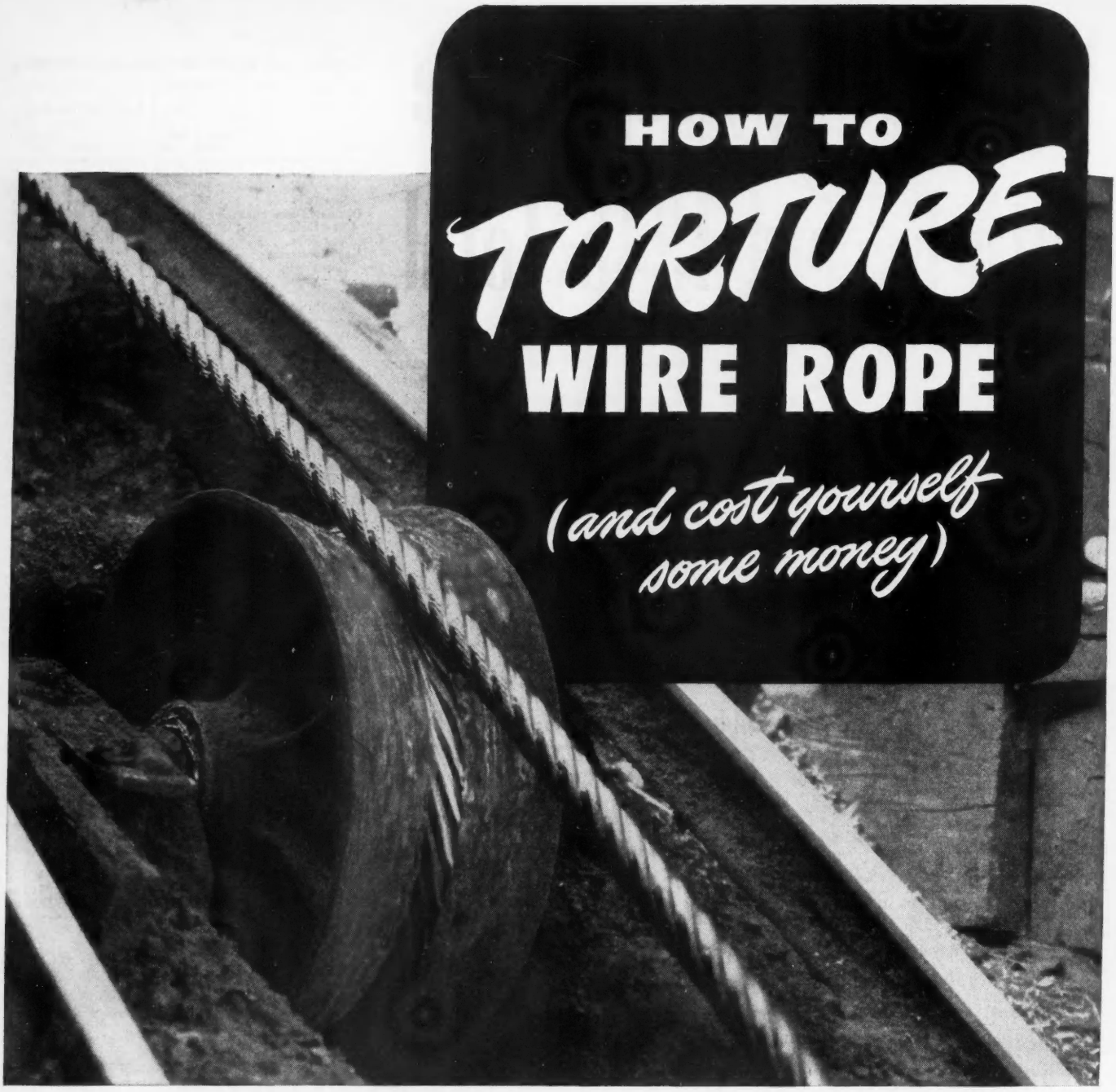
Summary of Results of Exploratory Drilling

ITEM	Aug., 1946	July, 1946	8 Months, Jan.-Aug. 1946	1945	Percent Diff.
Oil Discoveries	44	39	328	303	+ 8.3
New Fields	29	19	194	208	— 6.7
New Pays	15	20	134	95	+ 41.1
Distillate Discoveries	5	4	44	30	+ 46.7
New Fields	2	3	21	22	— 4.5
New Pays	3	1	23	8	+187.5
Gas Discoveries	5	10	82	69	+ 18.8
New Fields	5	7	63	58	+ 8.6
New Pays	.....	3	19	11	+ 72.7
Total Discoveries	54	53	454	402	+ 12.9
Extensions to Fields	16	15	140	130	+ 7.7
Oil Fields	12	12	105	111	— 5.4
Distillate Fields	.....	.....	4	5	— 20.0
Gas Fields	4	3	31	14	+121.4
Total Prod. Tests	70	68	594	532	+ 11.7
Dry Holes	364	299	2,310	2,373	— 2.7
(Weekly Average)	72.8	74.8	66.0	67.8	— 2.7
Wildcats	356	293	2,257	2,315	— 2.5
New Pays	.....	3	27	30	— 10.0
Outposts	8	3	26	28	— 7.1
Total Expl'tory Tests	434	367	2,904	2,905	.....
(Weekly Average)	86.8	91.8	83.0	83.0	.....
Percent Productive: (Weekly Average)	16.1	18.5	20.5	18.3	.....
Percent Dry: (Weekly Average)	83.9	81.5	79.5	81.7	.....

Dry hole completions are from weekly reports and totals represent completions for 5 weeks in August, 1946; 4 weeks in July, 1946; 35 weeks in Jan.-Aug., 1946; 35 weeks in Jan.-Aug., 1945.

Results of Exploratory Drilling in August and First 8 Months, 1946-1945, by Districts

State or District	MONTH OF AUGUST, 1946													FIRST EIGHT MONTHS, 1946																	
	Productive Tests									Unproductive Tests			Total Exploratory Tests	Productive Tests									Total Productive		Unproductive Tests			Total Dry		Total Exploratory Tests	
	New Fields			New Pays			Extensions			Total Productive	Wildcats	New Pays	Outposts		New Fields			New Pays			Extensions			8 Mo. 1946	8 Mo. 1945	Wildcats	New Pays	Outposts	8 Mo. 1946	8 Mo. 1945	8 Mo. 1946	8 Mo. 1945
	Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.						Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.									
Alabama											1			1											1	7			7	12	7	13
Arizona																										1			1		1	
Arkansas											7			7	2			1			1			4		31		1	32	28	36	28
California	3									3	20			23	6	3		4			6	3		22	12	155			155	189	177	201
Colorado							1			1				1				1			4			5	5	8	1	1	10	2	15	7
Florida											2			2							1			1		16			16	10	17	10
Georgia																										2			2	6	2	6
Illinois	4						6			10	44			54	14			18			31			63	63	310			310	247	373	310
Indiana							1			1	15			16	4	1		3			5			13	8	57			57	74	70	82
Iowa																														1		1
Kansas	1	1		1				3		6	25			31	27	5		4			17	5		58	60	163			163	224	221	284
Kentucky	1			1			1			3	11			14	3	2		4			4			13	10	55			55	57	68	67
Louisiana		1		2		1				4	21			25	13	4	4	22	2	8		2		55	43	125	1	1	127	94	182	137
North Louisiana		1								1	13			14	5	3	2		1	2		1		14	13	74	1		75	56	89	69
South Louisiana				2		1				3	8			11	8	1	2	22	1	6		1		41	30	51		1	52	38	93	68
Michigan											26			26	9	2	1		3		5	1		21	19	152		2	154	149	175	168
Mississippi											5			5	1	1				1		1		4	6	40			40	85	44	91
Missouri											3			3												14			14	16	14	16
Montana											1		2	3				2						2	6	11		2	13	10	15	16
Nebraska											3			3												3			3	3	3	3
New Mexico											4			4				2			2			4	9	33	2		35	44	39	53
New York																										1			1		1	
North Carolina																										1			1	1	1	1
Ohio											4			4	1	8					1	10		20	20	27			27	43	47	63
Oklahoma	4	1					1	1		7	37			44	42	14	1	5	5		10	3	1	81	78	167			167	207	248	285
Oregon																										2			2		2	
Pennsylvania																2								2		2			2		4	
Tennessee																										2			2	2	2	2
Texas	16	2	2	10		2	2			34	121		6	161	69	17	14	66	8	14	16	5	3	212	180	852	23	18	893	851	1105	1031
E. Tex. Border											3			3	3	3	1	1				1		9	2	6			6	10	15	12
Rest of E. Texas	1		1	2						4	7			11	3		2	3			1	1		10	5	55	2		57	45	67	50
North Texas	3			1						4	31			35	23	1		10			1			35	39	241	4		245	212	280	244
West Central Texas	5	1								6	16			22	13	3		8						24	18	112	4	1	117	91	141	109
West Texas	4						1			5	17		4	26	9	4		12			8			33	40	97	8	9	114	158	147	198
Panhandle																										11	1		12	7	12	7
Upper Gulf Coast	1			4		2	1			8	15			23	6		3	20	3	8	4	1	2	47	41	85	1	3	89	100	136	141
Lower Gulf Coast			1	2						3	9		1	13	2	1	8	9	2	6		2	1	31	32	95	2	3	100	115	131	147
Southwest Texas	2	1		1						4	12		1	17	4	5		3	2		2			16	8	88		2	90	80	106	88
South Central											11			11	6				1					7	2	62	1		63	33	70	35
Utah											1			1	1									1		2			2		3	
Virginia											2			2												2			2		2	
Washington																										1			1	1	1	1
West Virginia																3								3		4			4		7	
Wyoming				1						1	3			4	2	1	1	2	1		2	1		10	12	11		1	12	17	22	29
Total U.S.	29	5	2	15		3	12	4		70	356		8	434	194	63	21	134	19	23	105	31	4	594	532	2257	27	26	2310	2373	2904	2905



HOW TO TORTURE WIRE ROPE

(and cost yourself some money)

Here's a track roller on a mine slope that's badly in need of replacing—because of the harm it can do to valuable wire rope. The same condition often exists on sheaves and drums.

See the deep corrugations with the sharp ridges that have been worn in the groove—worn, more or less, to the pattern of the rope lay. Now, as you see them, they're sharp — irregular — jagged. They can cut, nick, and abrade as the rope passes over them. When the present rope is replaced, the new one can suffer real damage in the initial days of service, and this rope abuse will continue as long as the worn roller is kept in use.

So take our tip—don't run your costly wire rope over abnormally-worn equipment. It's false economy, any way you figure it.

At your request, made through your wire-rope distributor, a Bethlehem engineer will be glad to inspect your rollers, sheaves, or drums for size and wear. Often, he can spot and eliminate trouble while it's still easily cured.

When you think WIRE ROPE

. . . think BETHLEHEM

extensions to established oil fields total 105 compared with 111 last year.

Distillate discoveries, more numerous by 46.7 percent, total 44 against 30. These new sources include 21 new fields against 22, and 23 new pays in fields against 8. Extensions to distillate fields total four compared with five for last year's comparable period.

Gas Discoveries

This year's gas discoveries compared with last year's are 63 new fields to 58, and 19 new pays against 11, for a total of 82 against 69. Gas field extensions number 31 compared to the previous period's 14.

There have been 2310 dry tests drilled against last year's 2373 non-producers, a drop of 2.7 percent. Of this total 2257 were strict wildcats against 2315 for last year. Efforts to locate new producing strata in existing fields resulted in 27 failures this year against 30 last year. Attempts to extend field production by at least ½ mile resulted in 26 dry holes against 28. These dry wildcats and new pay tests cannot be counted as complete losses because much valuable geological information is obtained from the wildcats and most of the pay tests can either be plugged back or drilled deeper to the regular field pay.

During August there were 434 exploratory completions compared with 367 for the preceding month. As five weeks were used in computing records for August, the weekly average was 86.8 wells, while July with four weeks averaged 91.8 wells completed. July had 68 producers for 18.5 percent productive, while 70 successes for August amounted to only 16.1 percent.

New California Fields

California netted three oil fields out of 23 trials during August. They were a field of minor importance in Kern County and two promising pools on the outskirts of the City of Los Angeles. Colorado's Rangely field was extended ½ mile southeast by the only exploratory well drilled in that state. The only other producer in the Rocky Mountain area was a new deeper pay test in the Black Mountain field, Hot Springs County, Wyoming.

Out of 54 exploratory tests Illinois gained four new oil fields and had production extended in six oil fields. Indiana got one oil field extension out of 16 completions.

Kansas added an oil and a gas field, and found an additional pay level in an oil field, and extended the limits of three gas fields out of 31 wells.

An oil field in Kentucky's Butler County was discovered, an oil field new pay found and an oil field was extended by 14 exploratory efforts. Michigan and Mississippi completed 26 and five wells, respectively, without success, while three wildcats each in Missouri and Nebraska brought no production.

Louisiana drilled 25 wells and gained a gas field, two new oil horizons, and a new pay level in a distillate field. Out of 44 completions Oklahoma netted four oil fields, a gas field, and boundary extensions to an oil and gas field.

Florida drilled two wildcats, both of which proved dry, while Alabama's only completion was abandoned.

Thirty-four producers were completed in Texas out of 161 exploratory wells. These successful wells opened 16 new oil fields, 2 distillate and 2 gas fields, found 10 new oil pays and two new distillate horizons.

New Oil, Distillate, and Gas Fields and New Pay Horizons Discovered in the United States in August, 1946

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry Based on Pertinent but Necessarily Incomplete Data: Later Development or More Complete Data Obviously Might Require Revision of this Tentative Opinion).
		CALIFORNIA—New Oil Fields									
Kern		Pacific O & G Dev. Co.'s Castleberry 72, 22-25s-27e, Jasmine ar		8- -46	2794		Vedder sd; Mio	P 75	13.5		Of minor importance.
Los Angeles		British-American Oil Prod Co-Texas Co's Bodger 1, 22-3s-14w, Gardena suburb of Los Angeles.		8- -46	9154	9087- 9154	Conglomerate	F 1040; 11/32"	26		May prove to be of major importance.
Los Angeles		Shell Oil Co, Operator, Six Co's Fee 1, 2-3s-15w, just w of Los Angeles airport		8- -46	7033	6780- 6842	Schist cgl; Jur	F 300; 1"			Originally comp in lwr form as disappointing pumper. New development brightens outlook and addtn'l drlg apparent.
		COLORADO—Oil Field Extension									
Rio Blanco	Rangely	Stanolind O & G Co's Coltharp 1, sw se sw 35-2n-102w, ½ mi se ext.		8- -46	6174	5624- 6174	Weber sd; Penn	F 348; 4/16"			Found better sd conditions than expected for that side of field.
		ILLINOIS—New Oil Fields									
Cumberland	Lillyville	Nat'l Associated Pet. Co. Inc's Krogmann 1, nw ne se 31-9n-7e, abt 12 mi s and w of Mattoon pl.	7-26-46	8-27-46	2454	2446- 2454	McClosky li; Miss	P 140			
Shelby	Clarksburg	Sohio Pet. Co's Flenner 1, se ne nw 17-10n-4e, abt 7 mi w of Lakewood pl	4-21-46	8-13-46	1788	1774- 1788	Bethel sd; Miss	P 12; 16 wtr			
Washington	Richview	National Consumers, Inc's Koelling-Pitchford Unit 1, nw sw se 10-2s-1w	7- 6-46	8- 6-46	1532	1520- 1527	Cypress sd; Miss	P 31			3½ mi s Irvington pl and same w of Roaches, N pl.
Wayne	Covington, E.	K & B Drilling Co's Smith 1, w sw ne 21-1s-7e		8-13-46	3323	3144- 3160	Aux Vases sd; Miss	P 73			1½ mi fr Boyleston Consol. pl to the e, s and w.
		ILLINOIS—Oil Field Extensions									
Clay	Ingraham, W.	Gilliam & Aspin Drlg Co's H. D. Lewis 1, ne ne se 15-5n-7e, 1 mi fr Bible Grove fld, ¾ mi n ext.	6- 6-46	8-27-46	2941	2870- 2876	McClosky li; Miss	P 15; 35 wtr			
Wayne	Clay City Cons.	A. J. Slagter's R. Pierce 1, ne ne se 22-2n-8e, ¾ mi e ext.	8- 2-46	8-27-46	3052	3034- 3050	McClosky li; Miss.	F 432			
Wayne	Clay City Cons.	A. J. Slagter's Trotter 1, sw se ne 20-1n-8e, ¾ mi s etx.	7-27-46	8-27-46	3100	3096- 3100	McClosky li; Miss	P 66; 7 wtr			
White	Herald	Oil Management, Inc's Williams 1, nw ne sw 14-7s-9e, ½ mi e ext	7-14-46	8-27-46	2882	2863- 2868	Aux Vases sd; Miss	P 108; 2 wtr			
White	New Harmony-Griffin Cons.	Superior Oil Co's H. C. Ford 27, nw sw ne 8-5s-14w, abt ¾ mi w ext.	7-15-46	8-20-46	3007	2949- 2961	McClosky li; Miss	P 400			
White	Trumbull	W. I. Lewis' Bingham 1, sw nw sw 17-5s-9e, ½ mi ne ext	7- 4-46	8-27-46	3173	3162- 3166	Aux Vases sd; Miss	P 65; 144 wtr			
		INDIANA—Oil Field Extension									
Wabash	Rich Valley	Joseph Minneci's Votaw 1, ne ne 12-27n-5e	5-25-46	8-30-46	874	858- 870	Trenton li; Ord	P 25			
		KANSAS—New Oil Field									
Pawnee		Brack & Huber's Rutherford 1, sw ne nw 8-20s-16w, 10 mi n of Pawnee		8- 3-46	3823	3817- 3823	Arbuckle li; Ord	P 122		Str trp; dr	
		KANSAS—New Oil Pay									
McPherson	Paden	Anderson-Prichard Oil Co's Schulz 5, ne nw nw 15-18s-1w		8-16-46	3156	3151- 3156	Viola li; Ord	Sw 232		Ant; sub-dr	Opens commercial prod in Viola zn. Total of 16 wells in pl all prod fr Miss Chat.
		KANSAS—New Gas Field									
Sedgwick		Kingwick O & G Co's Bartholomew 1, se se sw 30-27s-4w, 2½ mi ne of Cheney		8- 1-46	3737	3692- 3737	Miss li; Miss	F 5 mln		Ant; seis	

New Oil, Distillate, and Gas Fields and New Pay Horizons Discovered in the United States in August, 1946

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry Based on Pertinent but Necessarily Incomplete Data: Later Development or More Complete Data Obviously Might Require Revision of this Tentative Opinion).
		KANSAS—Gas Field Extensions									
Kearny	Hugoton	Stanolind O & G Co's Glaser 1, c sec, 13-26s-38w, 7 mi w of Hugoton gas reserve	.....	8-27-46	2640	2432- 2640	Big Lime li; Perm	F 2.4 mln	....	Ant; dr	.....
Morton	Hugoton	Stanolind O & G Co's Sutton 1, sw sw sw 16-32s-40w, 2 mi w of Hugoton gas fld.	.....	8-20-46	2470	2315- 2384	Ft. Riley-Herrington sd; Perm	F 1.2 mln	....	.....	.....
Stanton	Hugoton	Stanolind O & G Co's Peppercorn 1, c sec. 4-30s-40w, 9 mi n and w of Hugoton gas reserve.	.....	8-27-46	2350	2336- 2350	Ft. Riley-Herrington sd; Perm	F 1.6 mln	....	Ant; dr	.....
		KENTUCKY—New Oil Field									
Butler	Rochester	Frank Bernier's Barbee 1, 17-I-32	.....	8- -46	401	382- 398	Pennsylavnia sd; Penn	P 10	....	.....	.....
		KENTUCKY—New Oil Pay									
Henderson	Wilson	Basin Drlg Co's Abbott 1, 10-T-22, ½ mi n of prod	.....	8-30-46	1715	1705- 1715	Waltersburg sd; U Miss	P 182	....	.....	Extends prod in fld that previously prod fr McClosky only.
		KENTUCKY—Oil Field Extension									
Henderson	Robards	Carter Oil Co's C. Powell 1, 20-0-23, 1 mi n ext	.....	8- -46	2705	2463- 2470	O'Hara li; L Miss	P 286	....	.....	.....
		NORTH LOUISIANA—New Gas Field									
Richland	.....	Kingwood Oil Co's Dr. T. M. Sayre 1, c se se sw 34-17n-7e, 4 mi s, 1 mi e Rayville.	6-28-46	8- 6-46	3430	2598- 2601	Tuscaloosa sd; U Cre	F 1.2 mln	¼"	.....	.....
		SOUTH LOUISIANA—New Oil Pays									
Evangeline	Mamou	Magnolia's Hilde Deshotel 1, 660 s&e of nwc nw¼ ne¼ 7-5s-1e, ½ mi nw disc. well.	5-15-46	8- 7-46	12037	11768-11772	Wilcox sd; Eoc	F 259; ⅛"	47.6	Flt Ant	.....
Plaque	Venice	Tide Water's Buras Levee Dist. 32, 759 s 235 w of nec 28-21s-30e	5- 4-46	8-15-46	12192	11775-11805	U. Miocene	F 260; $\frac{3}{64}$"	35.3	SD	.....
		SOUTH LOUISIANA—New Distillate Pay									
Allen	Elton, N	Lloyd H. Smith's Wm Rees 1, 1652.7 s of nl 2339.2 w of el 23-6s-3w, e side of prod.	6-11-46	7-30-46	7615	6044- 6046	Frio sd; Olig	18; 6 sw; 1.3 mln; $\frac{5}{32}$"	48	Flt Ant	.....
		OKLAHOMA—New Oil Fields									
Lincoln	.....	Hubble & Webb's Smith 1, se ne se 3-14n-6e, 1½ mi nw of Davenport pl	.....	8-26-46	4075	4042- 4055	Hunton li; Devo-Sil	P 6	....	Possible Str trp; dr	.....
Lincoln	Kendrick, E	Texola Drlg Co., Inc's Strough 1, sw sw sw 11-15n-5e, 1 mi w of Skellyville ar.	.....	8-10-46	4178	3670- 3680	Prue sd; Penn	P 26	....	Ant; seis	.....
McClain	.....	Big Chief Drlg Co's Stephens 1, cse sw 24-5n-2w, 10 mi s of Purcell townsite	.....	8-26-46	7977	6561- 6571	Second Bromide sd; Ord	236; .6 mln; $\frac{12}{64}$"	....	Sub	.....
Seminole	Garcreek	Gulf Oil Corp's Remaklus 1, sw sw nw 17-10n-7e, 1 mi w of E Haney fld	.....	8-18-46	3840	3725- 3780	Gilcrease sd; Penn	F 1101	41.2	Ant; seis-sub	.....
		OKLAHOMA—Oil Field Extension									
Seminole	Dora	Breco Oil Co's Woods 2, ne sw sw 27-7n-6e, ½ mi n ext	.....	8-14-46	2814	2791- 2814	Earlsboro sd; Penn	P 100	....	Ant; seis	.....
		OKLAHOMA—New Gas Field									
Lincoln	.....	Danciger O & R Co's Pantlick 1, (OWDD) nw ne se 15-12n-5e, 1 mi s of Wilzetta pl.	.....	7-18-46	4545	4536- 4544	Wilcox sd; Ord	F 406	....	Flt Ant; seis-sub	Originally abnd at 4369 ft.
		OKLAHOMA—Gas Field Extension									
Lincoln	Kendrick	Woffard, Nicholson & Rose, Inc's Naylor 1, nw sw ne 7-15n-5e, ¾ mi s ext	.....	8-18-46	3572	3557- 3572	Prue sd; Penn	F 19 mln	....	Ant; dr	.....
		EAST TEXAS—New Oil Field									
Cherokee	.....	Watson W. Wise and Delta Drlg Co's J. O. Huggins 1, 330 ft nsl and 960 ft fr wel of 117-ac tr, or 5600 ft wel and 330 ft nsl Levi Jordan sur., A-28	7-15-46	8- 8-46	5116	5111- 5116	Woodbine sd; U Cre	F 90; ⅛"	41.8	Str trp; geol	In group of nearby Woodbine failures that discount the favorable prod performance. Explorations along this "shore line" trend to be revived. Oil from disc consigned by cars to Moose Jaw, Can.
		EAST TEXAS—New Oil Pays									
Wood	Manziel	Magnolia Pet. Co's Malone-Taylor Unit 2, 330 ft ewl and 467 ft snl of J. C. Taylor 50½-ac tr, John Polk sur., offsetting Paluxy prod.	6- 3-46	8-14-46	6585	4784- 4790	Woodbine (Dexter) sd; U Cre	P 261; 65 wtr	26	Flt; geol	Prod from Dexter zn of Woodbine, topped at 4500 ft; unusual for prod in this zn. Not important.
Wood	Manziel	Rogers Lacy and R. J. Caraway's J. G. Shamburger 1-A, 330 ft ewl and 2300 ft nsl Jas. Moore sur 37, ne edge of multi-pay struct.	6- 6-46	8-10-46	6413	4146- 4166	Sub-Clarksville sd; U Cre	P 113; 1% wtr	16.2	Flt; geol	Shallowest of 6 prod zn, with Paluxy the main oil source. New pay passed by deeper wells.
		EAST TEXAS—New Distillate Field									
Bowie	.....	Barnsdall Oil Co-Shio Pet. Co-Phillips Pet. Co's Ivey Pickering 1, 480 ft wel and 330 ft fr nwl of 35-ac lse, or 2600 fr nsl and 510 ft ewl of R. E. Sevey Sur. A-523.	1- 5-46	5-29-46	7501	7030- 7088	Smachover li; Jur	168.8 mln	71.7	Flt; sub-geop	2nd Smackover disc for county.
		NORTH TEXAS—New Oil Fields									
Archer	.....	Clyde Gibson et al's L. F. Wilson-McCrory 2-A, 330 ft nsl and 280 ft ewl Sec. 55, ATNCL Sur;. twin to 4816-ft failure. ⅞ mi e of prod with intermediate dry holes.	7-27-46	8- 7-46	1467	1459- 1467	Cisco sd; Penn	P 50	39	Ant; geol	Small lenticular sand pl.
Archer	.....	Harvey Drlg Co's C. L. Abercrombie 1-A, 750 ft nsl and 1500 ft wel F. M. Taber Sur. A-723, ⅝ mi e of prod with intermediate dry holes.	6-25-46	7-24-46	1277	1272- 1277	Cisco sd; Penn	P 10	40.3	Ant; geol	Nearby failures indicated sml prod ar, but owner has scheduled 11 closein tests on 160-ac site.
Young	.....	Nu-Enamel Oil Operating Co's A. A. Donnell 1, 467 ft out nwc Sec. 1205, TE&L Co. Sur.	7- 6-46	8-12-46	3402	1759- 1780	Canyon sd; Penn	P 31; 4 wtr	40	Ant; geol	1st shallow prod for general ar; not import as pay due to be erratic.
		NORTH TEXAS—New Oil Pay									
Cooke	Almon	Fred Snuggs-McElreath-Neal & Kingery's Almon-Sun 7, 550 ft s and 200 ft w of nwc of J. M. Randolph Sur. A-868, but in A. C. C. Baily Sur., A-44.	7-20-46	8-10-46	3944	3934- 3944	Strawn (Basal) sd; Penn	P 120	25	Ant; geol	Deepest of 4 Strawn oil pays prod in ar. Deeper failures tend to localize this lwr pay.
		WEST CENTRAL TEXAS—New Oil Fields									
Eastland	.....	J. D. Sandifer Jr. et al's (was J. W. Sewell's) G. P. Brawner 2, 150 ft nsl and 550 ft wel sw ne E. T. Ry. 25, Blk 2, 1 mi se of depleted prod.	6-11-46	8-24-46	1061	1058- 1061	Strawn sd; Penn	P 28	38	Ant; geol	Not important.
Fisher	Huddleston	Skelly Oil Co's D. O. Huddleston 1, 2875 ft snl and 1675 ft ewl of T&P Ry. 11, Blk 19, 2 mi w of shallower prod in Jones County.	5-24-46	8-17-46	4405	4309- 4405	Palo Pinto (Basal Canyon) sdy-li; Penn	F 805; 2"	42	Reef; geol	Outstanding disc for dist; due to embrace 400 to 600 prod acs controlled by 2 cos; shallower pays probable. Casing trouble caused exclusion of top portion of 80-ft effective pay zn.

Nolan		Sohio Pet. Co's Irl Faver 1, c nw nw T&P Ry. 50, Blk 21, 5 mi e by s of Sweetwater; 10 mi sw of nearest prod.	9–15–45	8–13–46	5836	5671– 5682	Strawn sd; Penn	P 8; 8 wtr	41.8	Ant; geol	Not profitable, but prospect may be given addit'l test.
Shackelford		Roeser-Pendleton, Inc's T. W. Lee-Shell 1-B, c ne nw T&P Ry. 27, Blk. 11, 3 mi sw of Albany; between shallow pls.	.....	7–26–46	4874	4465– 4478	Bend li; Penn	P 7; 40% wtr	40.4	Ant; geol	Headed oil at early stage of comp, then fluid vol dropped. Not commercial.
Taylor		Carl Hovgard et al's J. H. Campbell 1, sw sw ne T&P Ry. 6, Blk. 18, 3 1/16 mi nw of Murphree multi-pay fld.	9–17–45	7–30–46	3202	2490– 2503	Noodle Creek li; Penn	P 5; 5 wtr	.....	Ant; geol	Justifies further exploration in area.
		WEST CENTRAL TEXAS—New Gas Field									
Coleman		Brannon & Murray (was H. O. Newman-B. H. Nolan's) J. R. Pearce 1, 990 ft snl and 330 ft wel of Labor 9, League 57, Coleman CSL Sur., 3/4 mi ne of Starnes oil pl.	5–18–46	7–30–46	2127	2002– 2007	Strawn sd; Penn	3 mln	.....	Ant; geol	Not important.
		WEST TEXAS—New Oil Fields									
Andrews	Block 12	The Texas Co's (was Atlantic Ref. Co) University 1-P, c sw nw Sec. 15, Blk 12, 6 1/2 mi nw of Martin multi-pay fld, nearest.	3–25–46	8– 4–46	8404	7170– 7250	Clear Fork (Tubb) li; Perm	F 159; 1/2"	32.5	Ant; geol	Substantial prod area, with Ellenburger faulire 1 1/16 miles nw; flowing press, g/o ratio and oil grav subnormal for Clear Fork. Drlg rush due to majority of 160-ac lses in ar needing prod by 11-14-46 to forestall expiration.
Crockett		Moore Exploration Co.-Stanolind & Magnolia's H. M. Halff-Lee Bivins 1, 660 ft out of swc I&GN Ry. 65, Blk 1, 1 3/4 mi sw of Noelke fld (shallow).	6– 8–45	7–30–46	7512	2692– 2710	Glorietta li; Perm	P 3 1/2; 45% wtr	31.6	Ant; geol	Not commercial.
Menard		Warren Pet. Corp.-T. F. Morrow's Mrs. Ruby Russell 1, c ne ne Sec. 18, S. Wallick (AB&M) Sur. A-1478.	6–18–46	8–12–46	2307	2282– 2290	Canyon sd; Penn	P 21	32.5	Ant; geol	Small prod area; possibly forerunner of series of pls.
Winkler	Sealy-Smith	Stanolind O & G Co's Sealy-Smith 8, 660 ft ewl and 1986 ft snl G&MMB&A 48, Blk. A, 1 1/4 mi s by e of 6100-ft Clear Fork prod.	6–16–46	8–11–46	5215	5115– 5215	Glorietta (Holt) li; Perm	F 421; 1/4"	35.4	Ant; geol	Top of Glorietta correlates 157 ft low to nearest producer (Clear Fork) in N Monahans fld, which is dry in Glorietta.
		WEST TEXAS—Oil Field Extension									
Gaines	Doss	Humble O & R Co's Helen Cunningham 1, c ne ne psl 7, Blk. A-24, 1 1/16 mi nw ext.	5–31–46	8– 6–46	7135	7000– 7120	Clear Fork li; Penn	F 389; 31/64"	38	Ant; geol	Largest producer for area.
		UPPER TEXAS COAST—New Oil Field									
Matagorda	Tidehaven	Magnolia's Live Oak Farms 1, 660 fr s&wl lot 9, 2000 w 1950 n of sec. J. W. E. Wallace sur, 190.3-ac lse, 1 mi w El Maton, 5 mi e Mayfields fld.	3–18–46	8– 4–46	11157	8450– 8456	Frio sd; Olig	F 160; 1/8"	41	Flt; seis	Thin sd section, probably limited prod and sm fld.
		UPPER TEXAS COAST—New Oil Pays									
Chambers	Cedar Point	Standard of Tex.-Salt Dome Oil Corp's State-Galveston Bay 33-M, 2410 fr nw&nel Galveston Bay sect 118, 640-ac lse.	.....	8–20–46	3880	3864– 3876	Miocene	F 121; 3/32"	27.6	Deep Dome	.....
Galveston	Caplen	Roxoil Drlg Co's R. P. Smith 1, 10 nw of sel 330 sw of nel 75-ac tr, Minor Knowlton sur.	7– 2–46	8–17–46	7808	4031– 4035	Miocene	F 61; 3/32"	26	Deep Dome	.....
Hardin	Saratoga, NE Flk	L. M. Josey et al's Caswell Tr. 3, 330 fr nl 587.5 n&e Well 2, 147-ac tr BBB&C sur. 72.	7– 2–46	8– 3–46	5970	5690– 5768	Yegua sd; Eoc	F 163; 3/64"	39.9	SD	.....
Hardin	Sour Lake, SW Flk	Texas Co's Fee 326, 330 fr sl 990 fr wly/wl 815.35-ac lse, Stephen Jackson Lge, 3196.9 sw nearest prod.	6–18–46	8– 1–46	6779	5197– 5210	Yegua sd; Eoc	F 243; 31/64"	24.6	SD	.....
		UPPER TEXAS COAST—Oil Field Extension									
Brazoria	Chocolate Bayou	Pan American Prod. Co's Callihan 1, 330 fr nel 418 fr nwl lot 2, Callihan sbdn of tr 9 on 320-ac lse, Angier-Hall-Bradley sur, 1 1/2 mi se Liverpool, 3/4 mi sw ext.	3–29–46	8–24–46	12204	8757– 8762	Frio sd; Olig	F 331; 4% wtr; 3/16"	40.3	Deep Dome	Major extension to field.
		UPPER TEXAS COAST—New Distillate Pays									
Brazoria	Blue Lake	McCarthy O & G Corp's Holland et al 1, 360 fr el 1245 s of sly/nl 275-ac lse, John Bradley Lge, 4000 e of oil prod, 9000 sw gas prod.	12– 8–45	7–17–46	11397	10980–11014	Frio sd; Olig	50; 135 mln; 1/4"	55	Flt	.....
Jefferson	Lovell Lake	Humble's Jefferson Ld. Co. 40, 478 ne of n bnk Bayou Din, 797 nw nw bnk Double Point Bayou, 2313.9-ac lse, C. Hillebrandt sur.	5– 2–46	7–31–46	9855	9030– 9040	Frio sd; Olig	137; 8.3 mln; 3/32"	47.1	Deep Dome	.....
		LOWER TEXAS COAST—New Oil Pays									
Nueces	Minnie Bock, N.	Atlantic's Geo. Renken 1, 660 fr el 1980 fr sl sect 45, Geo. H. Paul sbdn Robert Driscoll Rch, on 120-ac lse, M. L. de Herrera Gr.	4–14–46	7–24–46	9431	7870– 7881	.....	F 185; 1/8" & 3/16"	29.2	.....	.....
Nueces	Minnie Bock, N.	Louis Crouch's Walter L. Parr 2, 1467 fr nl 467 fr wl sect 36, Geo. H. Paul's sbdn of Driscoll Rch, Lopez de Herrera Gr, 239.7-ac lse.	7– 5–46	8–17–46	6803	5990– 6004	.....	F 107; 6 1/2% wtr; 3/64"	36.2	.....	.....
		LOWER TEXAS COAST—New Distillate Field									
Nueces	.....	H. R. Smith-W. C. McBride's E. G. Whitten 1, (OWDD) 660 fr sl 660 fr el 160-ac lse, sw sect 153, F. Z. Bishop sbdn Weil Rch, 3 mi e Stratton fld.	3–22–46	8– 1–46	7878	.....	.....	No gge; 30 mln; 3/64"	cond	.....	Old Southern Minerals dry hole abnd 1942.
		SOUTHWEST TEXAS—New Oil Fields									
McMullen	.....	Dee Davenport's Annie Graves Dolph et al 6-A, 330 fr n&wl se se sect 65, Shumway sbdn Shiner Rch on 200-ac lse, L. Musquiz sur 12, 8 mi sw Ezzell fld.	6–20–46	8– 1–46	1390	1379– 1390	.....	P 5	.....	.....	Not important.
Webb	.....	Killam-Hurd's J. G. Garcia Heirs 1, 795 fr nl 928 fr wl blk 47, Hughes Pet. Co. sbdn Los Ojuelos Gr, sur 592, 160-ac lse, 1 mi e Mirando City fld.	7–30–46	—8 9–46	1920	1870– 1874	.....	P 109; 25% w	21	.....	.....
		SOUTHWEST TEXAS—New Oil Pay									
Starr	Kelsey	J. O. Clarke Jr.'s Gonzales 2-A, 800 fr wl 1400 fr nl 158.56-ac "A" unit, tr 3-A, Santa Teresa Gr, 960 s sw Gonzales A-1, s ext well in shallow pay.	6–29–46	8– 4–46	5739	5706– 5718	.....	F 150; 3/32"	42.8	.....	.....
		SOUTHWEST TEXAS—New Gas Field									
Duval	.....	H. H. Howell's Lizzie Singer 3, 330 fr el 1570 fr nl G. Cumberland sur 4, 5 mi n Benavides, 1880 se Singer 2 dry hole, Palangana dome.	7–22–46	8– –46	1725	1683– 1705	.....	F 50 mln	.....	.....	.....
		WYOMING—New Oil Pay									
Hot Springs	Black Mtn.	Texas Co's State 3, nw ne se 36-43n-91w	7– 6–45	7–30–46	4997	3865– 3874	Madison li; Miss	Sw 480; 120 w	22	Ant; Sur	Fld has prod fr Embar and Tensleep since 1924; well tested all possible prod horizons. U horizons also prod considerable wtr; market outlet doesn't indicate an extended dr program. Fld will probably be put on prod next year.

[1] Character of producing formations abbreviated thus: ch, chalk; dolo, dolomite; li, limestone; sd, sandstone; sh, shale; ser, serpentine; cgl, conglomerate. Ages of formations abbreviated thus: Pleis, Pleiccene; Plio, Pliccene; Mio, Miccene; Olig, Oligocene; Eoc, Eocene; U. Cre, Upper Cretaceous; L. Cre, Lower Cretaceous; Jur, Jurassic; Tri, Triassic; Ferm, Fermian; Penn, Pennsylvanian; U. Miss, Upper Mississippian; L. Miss, Lower Mississippian; Devo, Devonian; Sil, Silurian; Ord, Ordovician; Cam, Cambrian.

[2] Barrels of oil per day (24 hr. rate), flowing (F), pumping (P), swabbing (Sw), or bailing (B); or million cubic feet of gas daily open flow capacity; size of choke given in inches.

[3] Type structure abbreviated as follows: Ant, Anticline; D, Dome; Fld, Fold or Folded; Flt, Fault or Faulted; M, Monocline; N, Nose; SD, Salt Dome; Str trp, Stratigraphic trap; Syn, Syncline; Ter, Terrace.

[4] Method of discovery abbreviated as follows: cd, core drilling; dr, drilling; geol, geology; geop, geophysics; grv, gravity meter; ran dr, random drilling; seis, seismograph; sub, subsurface geology; sur, surface geology; tb, torsion balance.

Tax Review

A Regular Feature of THE OIL WEEKLY

By WILLIAM O. TAYLOR*

Tax Court Overturns Government Ruling on Carried Interests

THE Tax Court, in *J. S. Abercrombie Company v. Commissioner*, 7 T.C. No. 16, appears to have given the final blow to G.C.M. 22730, insofar as that ruling attempted to establish the proper tax treatment of carried interests. Prior to the promulgation of that ruling, a carried interest was treated substantially the same, for tax purposes, as any other working interest. G.C.M. 22730 expressly repudiated the holding in certain earlier court cases and announced that carried interests would thereafter be handled in one of two ways, depending upon the extent to which such interest was to be carried.

In case the owner of such an interest would never be liable (except out of oil) for any part of development or operating expenses, it was said that such interest was, in substance, a profit-sharing interest and should be so treated for tax purposes. The effect of this, under court cases then thought to be controlling, was that the owner of the carried interest had no taxable income until after the payout period and could not deduct depletion when he began to receive income, and the operator could not deduct amounts paid to the carried interest, since they were deemed to be lease cost. On the other hand, if the carried interest was carried only to a limited extent, e.g. the first well, the owner of such interest was to be regarded as the owner of a sort of "deferred working interest" or, looked at differently, he was treated as having carved an oil payment out of his working interest to the extent of the amount of oil necessary to pay out the operator.

First Test

The *Abercrombie* case is the first in which the rule has been tested. Abercrombie was one of four joint owners of several leases and, with one of the other owners, bought out part of the interest of the two remaining owners. The latter received cash and an oil payment and also reserved a 1/16 working interest. It was further agreed that the two sellers would be chargeable with their share of expenses but were to pay only out of oil, if and when produced. Nearly five years were required for the carried interests to pay out.

During the payout period, Abercrombie excluded from its income and expenses the part which was attributable to the carried interests. The government's position was that all the income (except the oil payment) and expense should have been reported by Abercrombie and the other operator. The Tax Court, relying on *Reynolds v. McMurray*, 60 F(2d) 843, and *Helvering v. Armstrong*, 69 F(2d) 370, decided against the government without even mentioning G.C.M. 22730. That ruling may none the less be regarded as over-ruled, unless the Tax Court's decision is appealed and reversed. The reasoning in G.C.M. 22730 is not altogether illogical and an appeal of the case could go either way.

It should be noted that some of the "sting" had already been taken out of G.C.M. 22730 by the recent Supreme Court cases *(Kirby Petroleum Company, Crawford* and *Burton-Sutton Oil Company)* which held that net-profit payments are subject to depletion (see THE OIL WEEKLY of May 20 and July 15).

The effect of the above decision is that the owner of a carried interest must include in his taxable income his share of the oil produced each year, even though the operator gets all of it to reimburse himself for expenditures attributable to the carried interest. This is the effect of the decisions in the *Armstrong* and *McMurray* cases referred to above. He is, of course, entitled to depletion.

The *McMurray* case reached the circuit court a second time, the second decision being reported in 77 F(2d) 740. The decision reported in 60 F(2d) 843 had dealt only with the method of handling income. Later, the taxpayer and the government developed a difference of opinion as to how the carried interest should handle expenses and, in due time, they were again in court. The taxable year involved was one in which the carried interest was charged with capital expenditures of $56,924.38 and operating expenses of $86,344.45, and was credited with $119,146.35 of oil income. The earlier court case had already held that the taxpayer must report the $119,146.35 as taxable income, even though he actually received none of it. As to expenses, the government took the position that the taxpayer could only deduct $28,375.36 for operating expenses, plus an allowance for depreciation and depletion. Just how this figure was computed is not shown. The court held, however, that the taxpayer could deduct all operating expenses charged against him by the operator.

It is the writer's opinion that the above decision as to treatment of expenses by a carried interest owner is not necessarily correct. In *Sunburst Oil & Refining Company*, 23 B.T.A. 829, the Board of Tax Appeals (now the Tax Court) refused to allow a carried interest owner to deduct expenses charged to him by the operator to the extent that they exceeded income credited to him during the taxable year. This seems in many respects a sounder view. If the carried interest owner reports on a cash basis, it can be readily seen that he has not actually **paid** such expenses except to the extent that they have been recouped out of oil by the operator; and if he reports on an accrual basis, his liability to pay for the excess of expenditures over income is **contingent** on there being sufficient income in future years to pay out. It would appear to be a fair and workable rule (except for some distortion of the depreciation allowance) to treat a carried interest owner as having spent the earnings credited to him for equipment, drilling costs, operating expenses, etc., in the same proportion that he has been charged for such items by the operator.

Possible Refunds

Taxpayers who have relied on G.C.M. 22730 and have reported no income or expense from their carried interest during the payout period, should review their position in the light of the *Abercrombie* and *McMurray* cases. If both *McMurray* cases are correct, such taxpayers may be entitled to refunds for years in which expenditures by the operator exceeded income, or for prior or subsequent years by reason of the operating loss carryback or carryover. Likewise, they may be subject to deficiency assessments in the latter part of the payout period when current income exceeds current expenditures.

Anyone about to enter into a development program in which he will be carried should consider the possibility that he may incur tax liability several years before he receives any cash from his carried interest with which to pay his taxes.

*

Humble Man Is Member of New Regional Labor Group

The U. S. Conciliation Service has set up seven regional labor-management advisory committees to work with regional directors in settling local labor disputes, with Thomas W. Moore, industrial relations director of Humble Oil & Refining Company, Houston, as one of the four management members of an eight-man board for Region V, covering Kansas, Missouri, Arkansas, Texas, Oklahoma, Nebraska and Iowa.

The regional committees were set up under a program to decentralize the work of the Conciliation Service and speed up the settlement of labor difficulties by enlisting the services of men familiar with conditions and industries in the areas affected.

Each board will immediately qualify a panel of impartial arbitrators from which men can be picked when need arises for an arbitrator in a labor dispute.

Shell's Experimental Farm

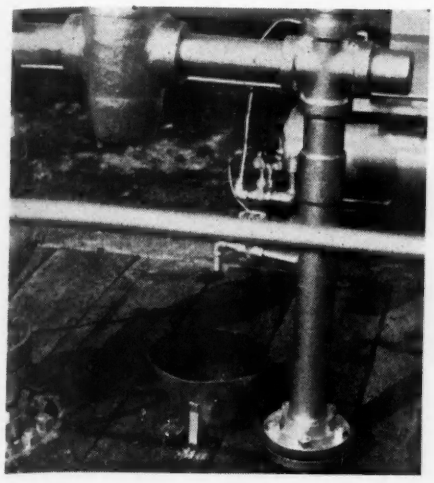
Shell Oil Company has placed in operation a half-million dollar agricultural laboratory and experimental farm 7 miles northwest of Modesto, Calif.

Occupying 142 acres in the heart of California's rich San Joaquin Valley, it will serve as a proving ground for Shell agricultural products, providing new and improved chemicals to help farmers raise crops more scientifically and at less cost, company officials said. Its facilities include separate research laboratories for many branches of agricultural science.

Dr. Roy Hansberry, formerly associate professor in Cornell University's entomology department, is director of the laboratory.

* The author is a member of the law firm of Butler, Binion, Rice & Cook, Houston.

Funnel In Cellar Floor

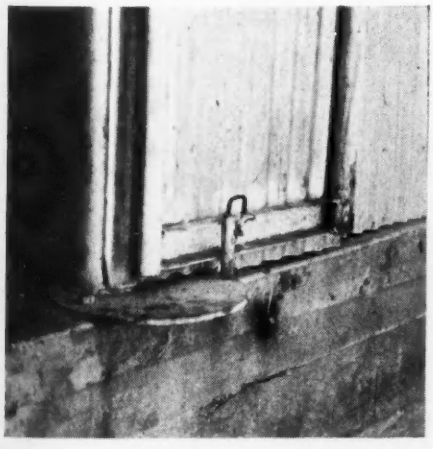


WELL HEAD CLEANLINESS

In an effort to reduce well site maintenance and at the same time eliminate a major fire hazard, one company equips each of its wells with a permanent wide-mouthed funnel which is nailed or screwed to the cellar flooring beneath the sample cock. Made of light gauge steel, the funnel is inserted several inches into a round hole previously cut into the floor at that point.

Light steel brackets welded to the side of the funnel are provided with holes for quick nailing to the floor when the unit is installed. Sufficient space is left between the sample cock and funnel to allow the clearance of a standard sample can. Overflow and drippings collecting in the funnel run into the cellar instead of forming an unsightly and potentially hazardous puddle of crude oil on the floor at that point.

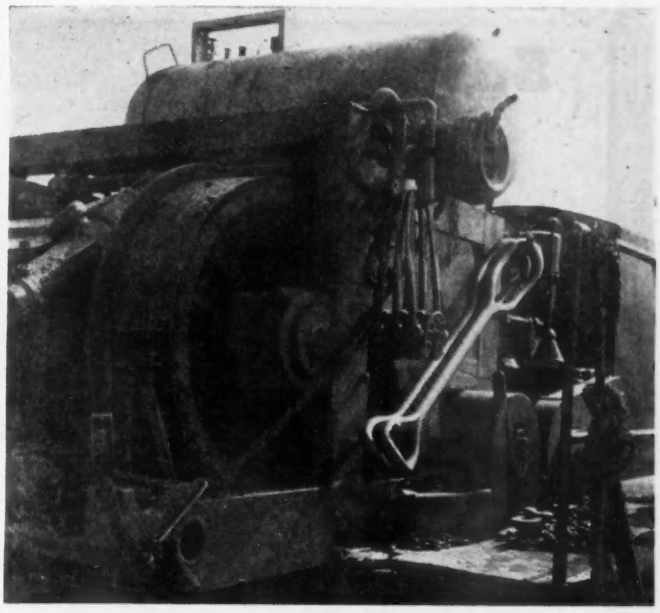
Stop Positions Door



WAREHOUSE EQUIPMENT

A common oversight on the part of field men charged with the responsibility of constructing small sheet-iron tool houses and similar buildings is that of providing for, in advance, a positive method of latching the large doors in any position from partially open to wide open. A quick and easily operated system devised by one operator consists of mounting the door jam (frequently made of used pipe) on a steel disc of any convenient diameter and thickness, then attaching to the bottom of the door itself a short steel rod plunger device which can latch into holes drilled around the periphery of the disc. The disc also serves to provide a suitable base plate by means of which a sturdier mounting can be made for the corner post of the wall section. Two or three expansion shield bolts, anchored in the concrete floor, afford a sturdy base for that portion which is resting on the concrete flooring. In the case illustrated, only one position, wide open, was desired for the particular doorway, so only one hole was drilled into the plate along the arc through which it passes.

Pulling Accessories Carried on Hoisting Unit



WELL SERVICING EQUIPMENT

A prime factor to be taken into consideration when outfitting a pulling unit is that of making every effort to utilize every bit of space available on the top and sides of the unit, thus leaving floor space relatively clear for efficient working conditions.

One company has provided a number of small pins, brackets and otherwise has made provision for the quick stowage of loose equipment. Rod elevators, for example, are looped neatly inside the semi-enclosed cat-line guard, and the cat-line itself is wound up tightly and anchored to a convenient part of the base, eliminating unsightly and entangling coils of rope in the truck bed. Tubing hook is secured to a fitting over the draw works reel, and the elevators are suspended diagonally from two sucker rod hooks welded to the side of the panel as shown. Other miscellaneous hooks, open links, and similar fittings are racked at other points around the unit, using hooks or brackets that prevent their falling off even when the truck is travelling over rough lease roads.

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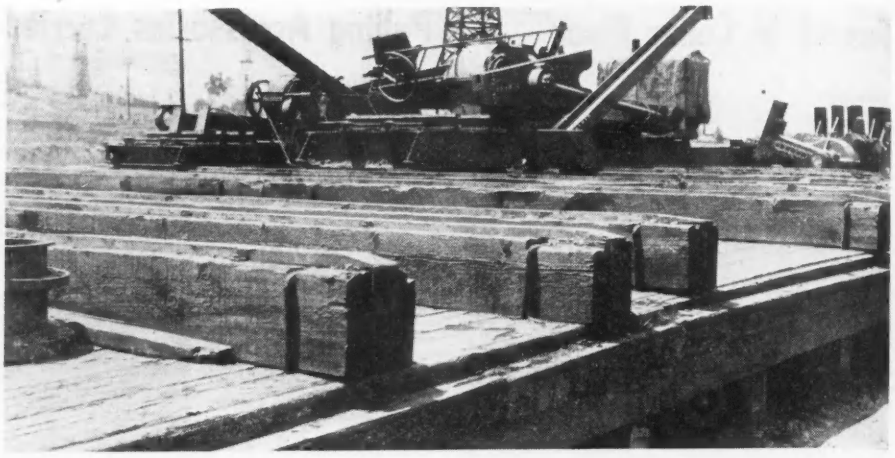


Platform Rails Speed Equipment Handling

Representing an improvement over the ordinary methods of loading and unloading heavy equipment in the warehouse yard, is the method used by one company which virtually eliminates the need for pipe skids and rollers. Along the surface of the rack were laid a number of 12 by 12 timbers running transverse to the length of the rack, or normal to the driveway. These were securely U-bolted to the platform. Along the top of each of these heavy timbers was strung a steel rail, consisting of a piece of 1 by 4-inch channel iron with the channel inverted. The channel was tapered or feather-edged at the driveway end, and by means of small steel angle clips, was lag-screwed to the timber at intervals on both sides along its entire length.

EQUIPMENT STORAGE

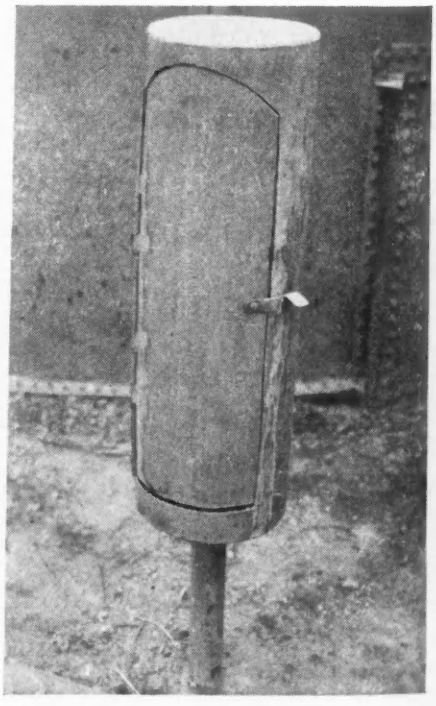
Heavy steel equipment such as drilling equipment, pumping units, heavy steel machinery, etc., are more quickly and easily handled when skidded along these steel rails. Men can walk between the rails to guide the heavy article and perhaps guide its movements with a crowbar, but as a whole, most of the loading can be performed with the truck's winch, pulling it directly onto the truck bed, or if unloading, using a snatch block attached to the far side of the rack. Heavy equipment mounted on skids is relatively easy to handle in this manner.

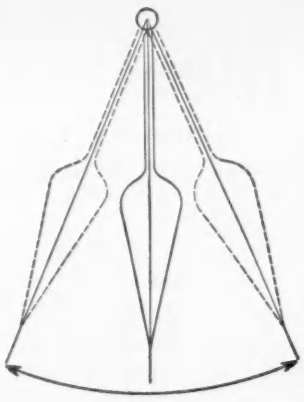
Housing Protects Field Fire Extinguisher

One of the simplest and most practical weatherproof housings that can be shopmade for field installed soda-type fire extinguishers is the use of a short length of light weight ten-inch casing. It is welded closed at top and bottom, then an oval-shaped opening similar to that shown is cut out. Closeness of fit between door and body of the housing depends upon the skill of the welder, but the average cut will allow entry of very little water or dirt. Hinges are made of a rod run through several short sections of tubing or ⅛-inch pipe nipples which are welded to the body of the housing. A simple latch holds the door closed. The housing is mounted atop a short pipe leg buried in the ground, and is painted a brilliant red, orange, or sometimes in red and white stripes, so it can be seen from a distance.

SAFETY LEASE

Such an installation is inexpensive and will pay for its installation many times over, if credit is given to the fact that the rubber hose and other light fittings deteriorate rapidly when the extinguisher is exposed to the weather.





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AIME To Meet

Petroleum Division to hear well-balanced program at its sessions scheduled this week in Galveston

THE FIRST annual fall meeting of the Petroleum Division of AIME to be held October 3-4-5 in Galveston, Texas at Hotel Galvez features a well-balanced program. The technical sessions of the three-day conference includes fourteen papers by prominent oil and gas authorities. Digests of these papers are presented below.

Geothermal Gradients in Mid-Continent And Gulf Coast Oil Fields

By EARL A. NICHOLS, Core Laboratories, Incorporated, Dallas.

Geothermal studies have been made in relatively localized areas, and this paper seeks to present a contour map of the Mid-Continent and Gulf Coast oil fields showing the geothermal gradients. This will serve as an aid in making an estimation of temperatures to be encountered in drilling wildcats or in deepening old wells.

In order to obtain accurate data, the well being investigated must necessarily be shut in until a condition of equilibrium of temperature has been reached, a period varying from a few hours to weeks. The temperature-gradient curve for each well was assumed to be a straight line, and the mean annual surface temperature was used. Some 1800 temperatures were taken in 194 fields. Measurements made in one pool were averaged in determining the gradient for that pool. Some measurements were made over a period of years. A plot of this information shows that in general the contour interval is 0.1 degree Fahrenheit per 100 feet of depth. From this map it may be seen that the temperature gradient for New Mexico-West Texas is considerably lower than those of the Gulf Coast. The gradient also increases inland from the Gulf, but a high plateau exists around Matagorda Bay. A large irregular basin lies in the vicinity of the Sabine Uplift. The map may be used in estimating temperatures in the following manner: the estimated subsurface temperature in degrees Fahrenhite = (depth in feet × thermal gradient from map) + 74 degrees.

A New Method for Measurement of Oil Saturation in Cores

By R. L. BOYER, F. MORGAN and M. MUSKAT, Gulf Research and Development Company, Pittsburgh.

The oil saturation of cores may be measured during the course of fluid flow experiments by a new method which involves the addition of an oil-soluble tracer material. This additive is an absorber of the X-ray; the degree of absorption being an indication of the saturation. X-rays have been found to be a highly penetrating form of radiation and can be transmitted through low density materials such as water, oil and rocks with little attention. Because ordinary fluids encountered in oil production produce such low degrees of absorption in the X-ray beam, an oil-soluble tracer having a high absorption coefficient must be added. Idobenzene was used as the additive since it was found that its presence in the oil made little change in the general physical properties of the fluid. It has been shown that the absolute values of the viscosity and surface tension are of minor importance in determining the permeability-saturation relationship, and the use of large concentrations of idobenzene was felt to be perfectly trustworthy. Although this study deals with studies of measuring oil saturation in place, the technique developed provides a means for studying the detailed dynamics of fluid motion within a porous medium.

A general observation made during the course of these experiments was of the major role played by end effects in small cores in determining the fluid distribution. It was also found that gravity became a more important factor than heretofore assumed. By this method, it is possible to give a qualitative explanation of most of the observations on vertical cores as resultant effects of the undirectional action of gravity, and the capillary pressure generally tending to increase the saturation at the outflow ends of the cores. In some of the experiments these factors superposed to accentuate the saturation gradient over the core, whereas in others their effects were oppositely directed and the resultant depended on their relative magnitudes.

Material Balance Method of Evaluating Pressure-Maintenance by Internal Gas-Injection in Tight, Volumetrically Controlled Reservoirs

By E. CHARLES PATTON, JR., Magnolia Petroleum Corporation, Dallas.

Reservoir fluid flow concepts developed and studied in the laboratory have been coordinated with the material balance equations to produce a complete mathematical description of the reservoir pressure and gas-oil ratio behavior history as a function of recovery in volumetric type reservoirs. This type reservoir is limestone or dolomitic, having no initial free-gas cap, and operating primarily under solution-gas drive. Specific permeabilities to air in these reservoirs range from 2 to 20 millidarcys. Early collection of field data in such studies is paramount, and it is fundamental that specific information be known for this type evaluation. Essential analytical data include core analysis for a representative number of wells, hydrocarbon analyses, gasoline content of produced gas, specific gravity, hydrogen sulphide content, analysis of bottom hole sample, relative permeability to oil and water, capillary data on cores, and water analysis. Field data essential are development rate history, abandonment history, pressure history, productivity indices, gas-oil content and oil-water contact, well interference data, average reservoir temperature, and pilot injection test data. From this information isopachous maps, cross sections and structural maps may be constructed.

The complete evaluation of reservoir performance in its relationship to time involves use of the following simultaneous equations: material balance, instantaneous produced gas-oil ratio, liquid saturation, multi-phase permeability-saturation, productivity index decline, and oil production rate. Use may be made of the above equations to calculate the average equalized sand face pressure necessary to inject the required volumes of gas into injection wells. Gathering and distribution systems, horsepower requirements, plant discharge pressure and compression ratios, and other injection system requirements may be determined. While evaluations from a "pure engineering" standpoint may indicate a gas-injection program, an economic analysis based on the prediction of reservoir performance have revealed that, even with several million barrels less ultimate oil recovery, the sale of residue gas without injection was economically superior. The relationship between the price of gas and that of oil is very important in this connection. It has been shown that a prediction may be made that will, with a reliable degree of accuracy, reflect the comparative economic benefits of a gas-injection pressure maintenance program.

Extending the Application of Electric Analogy in Oil Reservoir Studies

By HENRY SCHAEFER, Stanolind Oil & Gas Company, Tulsa.

The flow of electric current in non-inductive circuits has been applied to the solution of problems dealing with heat flow, and its application was first suggested for the flow of fluids or mass transfer by V. Paschkis and H. D. Baker. The application was made directly by W. A. Bruce for the solution of performance problems of class 1 reservoirs, that is, formations which contain oil but no gas. This method of solution to performance problems in class 2 reservoirs (those containing both oil and gas) relied upon a process of successive material balance calculations due to variations of fluid compressibility. Simplification of the application of this method to the solution of class 2 reservoirs may be made by an electronic control circuit which adjusts the analoby network for changing compressibilities for fluids contained in the reservoirs.

Two-dimensional fluid flow in a porous media is analogous to the current flow through an ideal conducting sheet perfectly insulated on both sides to correspond to the impermeability of formations above and below the porous strata. It has been shown that electric current corresponds to fluid flow rate, electrical potential corresponds to fluid pressure, electrical resistance corresponds to flow resistance, and electrical capacitance corresponds to the product of interstitial fluid times its compressibility. The reservoir is divided into "lumps" or blocks of regular shape and the various electrical values calculated to correspond to the known characteristics of the formations. The electrical network is then connected and a current of constant voltage is applied until the condensers are fully charged, at which time the network is in equilibrium. The production history for each block may be compensated for by draining some of the current from the condensors representing those blocks. Change in potential at a point of interest in the network is recorded by an oscillograph, and the resulting curve when interpreted in reservoir units shows the change in bottom hole pressure for the corresponding point in the porous media. Solutions for

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class 2 reservoir problems may be made by adding or subtracting fixed condensers at appropriate time intervals. A circuit to perform this addition and subtraction of capacitance was designed. Thus it can be shown that duplications of past and prediction of future bottom hole pressure changes in reservoirs containing gas can be obtained by electric analogy without material balance calculations.

Use of Helium as a Tracer in Oil and Gas Reservoirs

By E. M. FROST, JR., Bureau of Mines, Amarillo, Texas.

The use of helium in tracing the movement of injected gas into porous formations has been under observation at Elk Hills, California, Slaughter, Texas and at Cabin Creek, West Virginia. As a tracer, helium is mixed in varying proportions with gas being pumped into formations for conservation, repressuring or recycling. Being one of the elements, helium may be detected in produced helium-enriched gas by analytical methods. This procedure has proven to be one of the most practical in determining long-sought data on the movement of injected gas through reservoirs.

In the helium-tracer method, Helium in concentrated quantities is mixed with the injected gas, and offset producing wells are observed until the injected helium shows up. The time envolved has been from a few days to more than six months. In Elk Hills the helium tracer showed up in four equi-distant wells from the injection wells in 5, 22, 30 and 55 days respectively. Preliminary reports of the Cabin Creek survey show that the helium tracer has persisted in the producing wells over a much greater period than that required for the injection.

The Bureau of Mines has developed a portable gas analyzing apparatus which has great sensitivity. Principle of the apparatus is based on the fact that large volumes of all constituents except helium normally found in natural gas are absorbed quantitatively on activated coconut charcoal that is cooled to the temperature of liquid air. The bureau, in its search for commercial quantities of helium, has analyzed many producing wells, and the results of such analyses have shown that the percentage of helium in adjacent wells producing from the same reservoir will differ. During the course of a 20-year observation, these percentages have shown no tendency to become equal.

A Study of Some Factors Affecting Gun Perforating

By S. C. OLIPHANT and R. FLOYD FARRIS, Stanolind Oil & Gas Company.

Studies were made of gun perforating in both the field and laboratory to determine the factors which affect bullet penetration, casing burring, and depth measurement accuracy. Several gun perforating concerns were called upon to make various sized perforations in a test section of casing hung to a depth of 6600 feet in an abandoned well. These tests were compared with similar tests conducted on the surface to show that comparable results were obtained. Studies of gun perforations in laboratory specimens indicated that the degree of penetration is dependent upon powder charge, condition and quantity of powder, size of gun, shear disc, shape of bullet, size of bullet, sleeves or bushings on bullets, condition of gun barrels, and action of bullet in flight.

Striations made on spent bullets proved to be an indication of the degree of penetration, i.e., more striations, or scratches, were found on bullets making the farthest penetration. Broken bullets bailed from wells were believed to have resulted from angular contact with the casing, improper hardening, and from casing scraper action on those bullets partly penetrating the casing. It was also found that bullets designed to eliminate the inside casing burr sacrificed penetration. Both surface and subsurface tests indicated that split casing resulting from perforation may be reduced or minimized by good cement jobs behind the pipe, allowing sufficient cement setting time, use of J-55 or N-80 grades of casing, and use of the smallest practicable bullet.

Study of the effect of penetration into the cement sheath in the annulus by varying the setting time showed that clean perforations were obtained after the cement had been allowed to set about 20 hours, or a period of time sufficient to give the cement a tensile strength of 150 pounds per square inch. Perforations made in soft cement left holes up to three inches in diameter. Perforations penetrating soft formations showed similar results. Photomicrographs made of sands before and after perforations revealed that the walls of the bullet hole in the formation had been ground up into fine particles. Permeability was accordingly reduced considerably. This may be a partial explanation of the problem encountered in obtaining a satisfactory test after perforating tight formations.

Engineering Developments in Southwest Texas

By JOHN W. CRUTCHFIELD and HORTON T. PRUETT, Consulting Petroleum Engineers, Corpus Christi, Texas.

Developments in petroleum engineering in Southwest Texas have been in two general fields, namely, in well completions and in reservoir work. In this highly productive area, all types of reservoir conditions and reservoir drives may be found, but predominant are the multi-sand reservoirs characterized by relatively thin oil columns. These formations are overlain by gas caps and/or underlain by water. Much progress has been made in the method of cementing off these thin sand sections as compared to former methods. Improvements in this matter have resulted from: controlling hole size before setting casing, using wall scratching and casing centering devices, and using multi-stage cementing devices. Development of multiple stage cementing tools has attributed to the success of this method of protecting both the top and bottom of productive sands.

Extended efforts on the part of all operators in making unitized reservoir studies has advanced knowledge in this field. Committees composed of representatives of each of the operators in the four largest fields in Southwest Texas have done much in the way of promoting reservoir performance studies. With such information available to all at minimum expense to each, the operators can more efficiently produce their respective properties.

Among the most interesting industrial and chemical engineering developments are the proposed Carthage Hydrocol, Incorporated, Fischer-Tropsch plant to be constructed at Brownsville and the Celanese hydrocarbon plant at Bishop. The Hydrocol plant will use dry natural gas as raw material and produce 80-octane gasoline and other petroleum by-products. The Celanese plant will use propane and butane to produce such materials as acetic acid, methanol, propionic acid and formaldehyde used in plastics.

Interstitial Water by the Capillary Pressure Method

By O. F. THORNTON and D. L. MARSHALL, The Texas Company.

A new method has been developed to determine the interstitial water saturation of cores. This value may be directly measured at a capillary pressure under conditions simulated to correspond to those found in the reservoir. Known as the capillary pressure method, capillary pressure may be defined as the difference in pressure between two contacting fluid phases, such as oil and water, and such pressure varies in any given reservoir with depth due to the greater density of the water phase as compared with oil or gas. Cores taken from a well drilled through the cored section with oil base muds were analyzed. Cores from two other wells drilled with water base muds were also obtained, as well as electric logs of each. Laboratory apparatus was similar to that used by other investigators. The core samples were saturated and placed in the sealed container on a permeable membrane. A constant air pressure was applied on top of the core until equilibrium was obtained (as determined from weight measurements). Water saturation was the difference between the dry weight and the weight of the partially saturated core. Results from these determinations were compared with results from the retort method and salinity determinations to show that the average difference in 20 samples was —1.3. Such close agreement indicates that the capillary pressure method properly applied yields results sufficiently accurate for most engineering purposes. In some cases, these results determined for one or two wells may, by correlation with other measured physical properties, serve as a basis for estimating average water saturation at other points in the same reservoir.

Protecting Oil Storage Tank Bottoms With Magnesium

By J. R. JAMES and R. L. FEATHERLY, The Dow Chemical Company.

Cathodic protection has been used with considerable success to combat corrosion of metallic structures in contact with soil or water, which corrosion damage is estimated at $200 million annually. This method of protection is based on galvanic action. Metal is dissolved from the high potential areas as current is supplied to the lower potential areas, thus causing corrosion at these points. Instead of the metal structure furnished this current demand, an external source, a magnesium anode, located at some convenient distance from the structure, supplies the current. The magnesium anode, in this case, is corroded instead, and may be easily and cheaply replaced. The flow of current from the sacrificial anodes to the metallic structures tends to raise the potential of the structure to such a point that all the potential differences are overcome or equalized. Properties of magnesium which make it desirable for cathodic protection are: a high anodic potential,

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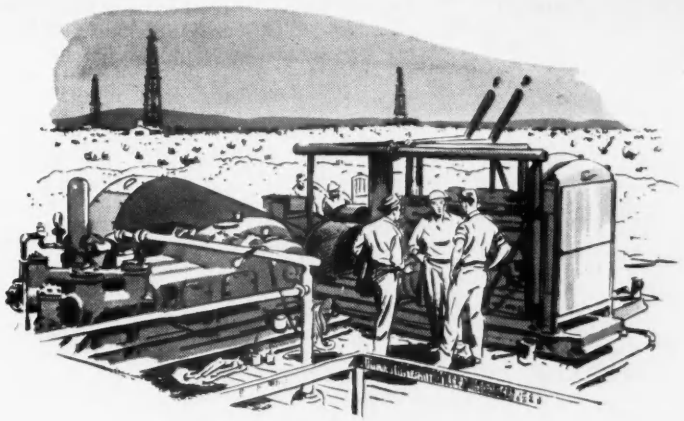

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Rated H.P. (continuous service)	300
Main Bearings:	
Type	Precision
Number	7
Diameter	5"
Length, Overall	141 9/16"
Width, Overall	65 7/8"
Height, Overall	91½"
Net Weight—Approximate, lbs.	12,750

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the ability to store or release large quantities of electricity per unit weight, and the absence of polarization in most soils and waters.

Back fills are used around the anode to produce more effective reactions. These mixtures of bentonite clay and hydrated gypsum depend upon soil characteristics. In addition to protecting pipe lines, magnesium anodes have been installed on underground tanks, oil storage tank bottoms, lead sheathed cables, hot water heaters, sea water condensers, and several others. The Republic Pipe Line Company installed this type anode on two 20,000-barrel tanks and two 55,000-barrel tanks. The 60-pound anode was used with proper back fill, and after three months operation, tank-to-soil potential measurements showed the tanks to be overprotected. Resistors were added to each of the anode lead lines to the tanks to reduce the current flow, which reduction increased the life expectancy from 4 to 8 years. One advantage of this method is the absence of maintenance. Thus it appears logical to spend $25 for ten years of cathodic protection rather than replace a storage tank at a cost of $10.000.

Use of Plastics in Consolidating Loose Sands in Wells

By R. H. SMITH and A. C. POLK, JR., Dowell Incorporated, Houston.

Drilling through unconsolidated sands presents no particular problem, but it is the production of oil and gas from these sands that cause a well to "sand up," or result in costly repairs when sand is produced with the fluid. A new approach to this problem involves use of plastics to bond the sand grains together without materially reducing the effective permeability of the formation, a method being used throughout the Gulf Coast. Sand consolidating plastics are different basically from other plastics in that they must not form an impervious seal. This problem has been attacked by the application of screens and liners, which in many cases have corroded or have been cut out. Even in consolidated sands, the cementing material may be dissolved out after the well begins to make water, resulting in sanding conditions.

Plastics in this type work must be able to penetrate the formations at low pressures, possess sufficient strength, and when solidified indicate inherent permeability. Many plastics undergo polymerization, condensation, or association reactions in a short time due to high well temperatures, the time element depending upon the nature of the plastic and the temperature. Plastics used in sand consolidation work develop permeability by the reduction in volume upon solidifying. They may be applied in cases where the temperature ranges from 105° to 350° F. Actual field data indicate that effective permeability in some cases has been reduced by no more than 10 to 15 percent. Factors which determine the effectiveness of this method are bottom hole pressure and temperature, water/oil-gas/oil ratios, type of reservoir control, producing status, size of hole, production history and type of completion. Consideration of these will determine the application of plastics. It is necessary that the treated formation be completely isolated to prevent the plastics from following the casing up or down the hole. Even though a well has produced large quantities of sand, no cavities exist around the casing, but the formation tends to move toward the bore hole. From formation data it is possible to calculate the amount of plastics necessary for desired penetration. The method used in forcing the fluid plastics into the formation is similar to that of squeeze cementing, but requires special equipment. Since this service has been introduced, more than 150 wells have been treated with encouraging results.

Phase Relations of Hydrocarbon-Water Systems

By JOHN J. McKETTA, JR., University of Texas, Austin, Texas, and DONALD L. KATZ, University of Michigan, Ann Arbor.

Because water in its various forms is present in petroleum reservoirs, information regarding its behavior in such systems is of increasing importance. Experimental data collected in the laboratory on the phase relations of methane-n-butane-water systems have been combined with information collected by other experimenters to present the water vapor content of natural gases, the solubility of water in hydrocarbon liquids, and the solubility of natural gases in water. Data found in literature is fragmentary at temperatures above the hydrate region, and the author has made determinations on the compositions and specific volumes of the coexisting phases in the three-phase region and two-phase region at temperatures up to 280° F. and at pressures to 3000 psi absolute. Data collected have been correlated to provide methods for predicting such phase relations. Investigations of the water content of natural gases of the methane-n-butane-water systems showed that the composition of the hydrocarbon phase was a variable, and data obtained in these experiments are in agreement with those observed by Reamer, Olds, Sage, and Lacey. From curves presented, it is possible to predict the yield of water from a condensate well producing natural gas at its dew point with respect to water in the reservoir. Experimental results on the solubility of water in liquid paraffin hydrocarbons indicate that no simple correlation exists when molecular weights are used. Although natural gases are less soluble in water than in hydrocarbon liquids, it was found that reservoir waters do dissolve some gases. Of interest is the fact that methane is more soluble than butane at pressures above 400 psi.

Effective Technical Group Speaking

By A. ROSS ROMMEL, Humble Oil & Refining Company, New Orleans.

To speak effectively is an important factor in the success of a technical man. Three basic fundamentals of effective speaking are enthusiasm and confidence, preparation, and presentation. Confidence in knowledge of the subject and confidence to speak before a group do much to aid a speaker. Preparation should be the assembly of thoughts, ideas, convictions, urges and knowledge in such a manner to obtain the desired response from an audience.

In delivery or presentation, the speaker should consider the value of conversational methods to gain close contact with listeners. Nervousness, which every inexperienced speaker encounters, is overcome by practice, naturalness and determination. In opening an address, it is important to grasp the audience's attention through a story, a question, a quotation, etc. Do not rush through a speech . . . the use of pauses at the end of strategic sentences adds emphasis. Never apologize. Sentences should be simple, but if unusual technical terms are used, they should be defined. Factual information is best put over with the aid of charts or graphs. Repetition will drive home a thought or idea but should not be used too frequently. A relaxed speaker who is at ease and natural can do a better job. Gestures are effective and should be studied.

Interest in a speaker's subject may be maintained by the following methods: (a) a subject of mutual concern, (b) elimination of reading, (c) comfortable meeting place, (d) demonstrations, (e) visual aids, (f) experiences, anecdotes, descriptions, comparisons, and (g) change of pace, voice, gesture, sense of humor.

In group discussions, participation by the group will depend on the leader or speaker. The audience will more readily give its views if the "ice is broken" by the speaker. When introducing an individual, the speaker should consider the important and interesting points of his subject's personality, rank, location, etc. A speaker's conclusion calls for all the sincerity, enthusiasm, alertness and demeanor used during his entire speech. Make it good and leave the audience with the feeling of giving them everything you have.

A Review of Geophysical Prospecting Methods, Devices and Procedures

By C. H. DRESBACH, Western Gulf Oil Company and PAUL WEAVER, Gulf Oil Corporation.

This paper reviews the recent trends in geophysical surveys, as to the areas in which the work has been done, and the kind of structures mapped, particularly on the Gulf Coast and on the Pacific Coast. Areas adjacent to the older oil fields in both areas have been mapped to great depths and it is probable that certain types of structural traps in these areas have nearly all been located. New territory outside these areas which is just beginning to be mapped in similar close detail includes the waters offshore the coast of Louisiana and Texas, Florida and its offshore waters, including the Bahamas, and the Oregon-Washington region.

Engineering problems which will arise as these new areas are drilled are briefly discussed and include: (1) Protection against hurricanes and northers in offshore drilling, and (2) Porous limestone when returns are lost.

Secretary of Navy to Speak at Texas Meet

Navy Secretary James Forrestal has accepted an invitation of the Texas Mid-Continent Oil and Gas Association to address its Victory meeting which will be held October 17 and 18 in Houston. Forrestal's talk on "Oil and Victory" is scheduled for the second day.

Titusville Area Maps

"Oil and Gas Field Property Line Maps of the Titusville Quadrangle, Pennsylvania," known as Special Bulletin No. 4, compiled by Parke A. Dickey, is ready for distribution. Consisting of 9 maps on a scale of 2000 feet to one inch, it may be obtained from the State Division of Documents, Department of Property & Supplies, 10th and Market Streets, Harrisburg, Pa., for $1.

Runs to Stills, Output of Principal Refinery Products Cut Back Sharply

Crude runs to stills and output of principal refinery products were cut back considerably during the week of September 21, while little change was made in crude production from the previous week.

Stocks of gasoline were further reduced, while inventories of the burning oils continued their steady seasonal accumulations. Stocks of light fuel now stand almost 3 million barrels higher than the previous all-time peak of November, 1941. These trends were revealed by the latest weekly report of The API.

A slight increase of 2000 barrels a day brought U. S. crude production up to 4,775,000 barrels daily for the week of September 21, which is 247,000 barrels or 5.5 percent more than the 4,528,000 average of the comparable week of last year.

Crude runs to U. S. refinery stills averaged 4,785,000 barrels a day during the week, a drop of 107,000 daily from the previous week, but an increase of $337,000 barrels or 7.6 percent over runs of last year's like period.

Stocks of refinable crude were reported by the Bureau of Mines to be 221,903,000 barrels on September 14, showing a reduction of 1,229,000 barrels during the previous seven days, but representing an increase of 7,423,000 barrels or 3.5 percent over stocks held one year before.

The week's gasoline output, including natural blended at the refineries, totaled 14,538,000 barrels, and was a reduction of 258,000 barrels compared with the previous week's production. Compared with last year's comparable week, this week showed an increase of 290,000 barrels or 2 percent. Withdrawals totaling 964,000 barrels were made from stocks of finished and unfinished gasoline during the week bringing them down to 85,854,000 barrels. Although current stocks are at the lowest level for the year, they exceed those held a year ago by 5,512,000 barrels or 6.9 percent.

Distillate fuel oil production for the week amounted to 5,450,000 barrels, a drop of 237,000 from the previous week, but an increase of 752,000 barrels or 16 percent over the like period of last year. Stocks of this fuel now stand at 57,906,000 barrels, highest level in history, after gaining 1,702,000 barrels during the week. These record-breaking stocks are 12,943,000 barrels or 28.8 percent higher than those on hand one year ago, and top the previous all-time peak of November 15, 1941, by 2,923,000 barrels.

Residual fuel oil output of 8,158,000 barrels showed a cutback of 261,000 from the previous week, but represented an increase of 23,000 barrels or 3/10 of 1 percent over the corresponding week of 1945. Stocks of the heavy burning oil rose 1,178,000 barrels during the seven-day period and stood at 56,914,000 barrels at the week's end. These stocks are 8,797,000 barrels or 18.3 percent higher than the 48,117,000 barrels in storage at the same time last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	54,983	11–15	102,448	1 –4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 8
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,162	10–28	64,744	10– 7
1945	4,944	7–21	[1]5,140	8–18	227,554	10–13	99,012	3–24	45,341	11–17	56,074	1– 6
1946	[1]4,961	6–15	4,911	8–31	229,430	3– 2	105,233	2–16	[1]57,906	9–21	56,914	9–21
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 3
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–13
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–18	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	3,621	10– 6	3,409	10– 6	[4]211,813	8–25	70,791	10–13	26,483	3–17	38,548	5–26
1946	4,403	3– 9	4,498	1–12	218,193	1– 5	85,854	9–21	25,131	3– 9	37,289	4– 6

TRENDS OF 1945 AND 1946

Trends in Week Ended	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,561	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,821	15,194	89,121	4,667	29,184	9,670	38,548
June 30	4,903	4,909	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,892	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 27	4,273	4,838	224,230	15,530	74,335	5,159	43,472	8,691	45,943
November 24	4,469	4,648	219,363	15,681	83,184	4,802	45,258	8,800	47,474
December 29	4,474	4,729	218,918	14,546	95,205	5,055	36,651	8,765	42,447
1946:									
January 5	4,548	4,651	218,193	14,488	98,494	5,293	35,199	8,867	42,371
January 26	4,626	4,553	220,544	13,622	101,737	5,720	29,498	8,411	39,722
February 23	4,714	4,595	226,699	13,175	104,709	5,728	25,398	7,913	39,290
March 30	4,425	4,684	224,994	13,896	104,715	5,337	28,240	8,738	37,746
April 27	4,672	4,685	224,443	14,228	99,631	5,568	30,466	9,204	39,404
May 25	4,759	4,857	222,214	14,322	95,769	5,463	32,973	8,908	43,368
June 29	4,957	4,854	223,883	14,500	92,333	5,325	37,762	8,828	46,447
July 27	4,926	4,896	228,756	14,535	88,626	5,817	44,316	8,217	49,517
August 31	4,833	4,911	227,132	15,014	87,217	5,630	53,134	8,539	53,173
September 7	4,800	4,881	223,132	15,263	86,911	5,625	54,721	8,313	54,786
September 14	4,773	4,892	221,903	14,796	86,818	5,687	56,204	8,419	55,736
Sept. 21, 1946	4,775	4,785	.....	14,538	85,854	5,450	57,906	8,158	56,914
Sept. 22, 1945	4,528	4,448	[5]214,480	14,248	80,342	4,698	44,963	8,135	48,117
Change:									
In Week	+2	—107	—1,229	—258	—964	—237	+1,702	—261	+1,178
In Year	+247	+337	+7,423	+290	+5,512	+752	+12,943	+23	+8,797
In Year	+5.5%	+7.6%	+3.5%	+2.0%	+6.9%	+16.0%	+28.8%	+0.3%	+18.3%

[1] All time peak. [2] Lowest between January, 1922, and July 1, 1944. [3] Lowest since October, 1922 due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, September 15, 1945.

Personnel Changes Announced By Standard of California

The following personnel changes have taken place recently in the producing department of Standard Oil Company of California:

M. T. Miller, formerly assistant production foreman, northern district, has been made senior gas and oil coordinator, Los Angeles office. J. T. Crooker, assistant production foreman at Buena Vista Hills, has been appointed to Miller's former position.

A. D. Henderson has been advanced from production foreman at Kettleman Hills to assistant production superintendent.

M. E. Kinnebrew has been transferred from production foreman at East Coalinga to production foreman at Kettleman Hills.

J. J. Higginbotham, production foreman at Kern River, has been transferred to similar duties at East Coalinga. G. W. King has been made production foreman at Kern River.

C. S. Toy has been transferred from assistant production foreman at Kern River to similar duties at Kettleman Hills.

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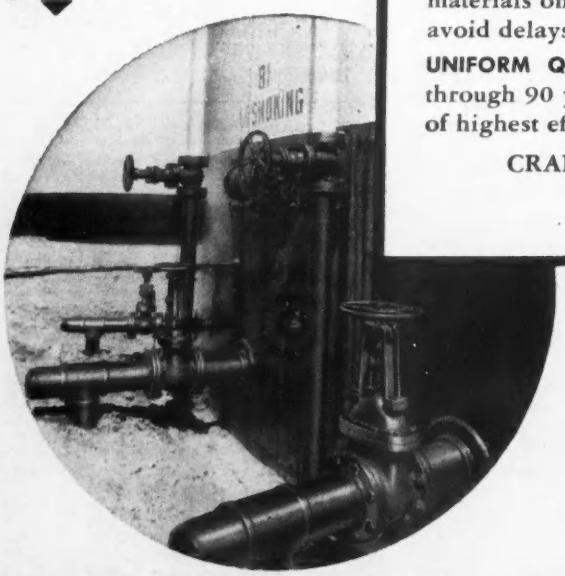

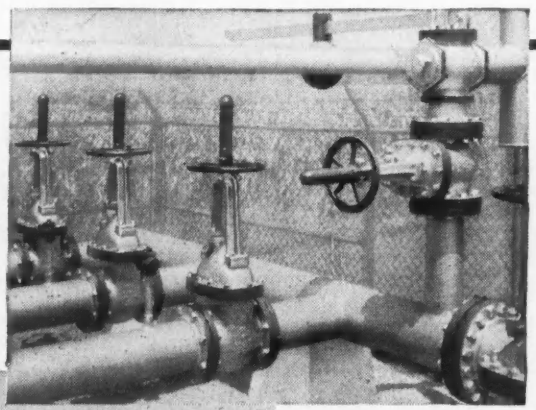

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☆ Oklahoma

Third Oil Pool Is Opened in Shallow Cotton County Trend

Third oil pool opened in shallow Cotton County trend; Noble County reports 2 oil discoveries; Mid-Continent has pool opener east of Keokuk; Deardorf completes Hughes County discovery well east of Holdenville; offset to South Wilzetta discovery is dry.

Cotton County: S. D. Johnston and Acme Machine & Die Company of Wichita Falls, Texas, opened a third shallow pool in the current drilling campaign in this county when Simon 1, NE SE NW 9-3s-11w, about 2½ miles southwest of Walters, flowed an estimated 200 barrels of oil daily on drill-stem test in Pennsylvania sand between 1580-95 and 1518-1615 feet. This is the third discovery in the area during the past 6 months, all credited to Wichita Falls operators. Meantime, Johnston and associates were reported to have staked 5 additional locations in the same section. More than 60 rigs are reported turning in the Essaquandahle and Cache Creek areas which preceded the recent strike with wells making from 100 to 200 barrels a day, producing from sands between 1300-1500 feet.

Noble County: Two widely separated discoveries turned the spotlight on the county with the Big Bear Oil Company, a newcomer to Oklahoma, opening an oil pool about 4 miles east of Billings at Curby 1, NW NW SW 23-24n-2w. Topping Wilcox sand at 4670 feet and with 7-inch casing set at 4662 feet the well flowed about 400 barrels of oil per day from 4662-92 feet after being acidized and was shut in for tankage. Barnes Drilling Company of Tulsa, is the contractor. Between the Polo and Otoe City pools, T. T. Eason et al's Carter 1 is a discovery well after heading and flowing at the rate of 100 barrels in 1 hour from Mississippi lime between 4808-11 feet. The well died at the end of the hour test and operators were running tubing and preparing to acidize. It was drilled to 5183 feet in dry Wilcox sand.

Okfuskee County: Mid-Continent Petroleum Corporation has a Prue sand well and is slated to test the Hunton lime at Baker 1, SE NE NW 31-12n-7e. Prue sand was topped at 2929 feet with the base reported at 2975 feet. A drill-stem test between 2930-50 feet showed gas in 10 minutes and recovered 1000 feet of oil in 30 minutes. The Booch and Cromwell sands also offer good possibilities before the well reaches the Hunton which may be topped at approximately 4350 feet.

Hughes County: B. C. Deardorf completed Gentry 1, NW NW NE 14-7n-9e, to open an area about 4 four miles east of Holdenville. Drilled to 2996 feet, total depth, the wildcat topped Booch sand at 2874 feet and initially flowed at the rate of about 200 barrels of oil per day. Final gauge into tanks listed the discovery good for a little more than 50 barrels of oil daily.

Pottawatomie County: The new South Wilzetta area opened by Danciger Oil & Refining Company received a setback when Danciger's Roller 1, SE NW SW 15-12n-5e, a 20-acre southeast offset to the discovery well, was abandoned at 4685 feet after failing in the First and Second Wilcox sands. The Pantlik 1, in NW NE SW Sect. 15, which opened the pool, pumped 410 barrels of 25-gravity oil in 24 hours from Wilcox sand at 4537-44 feet which resulted in a brisk lease play.

Cimarron County: The Pure Oil Company continues its campaign to outline the big Keyes structure in the Oklahoma Panhandle where it owns a block of 70,000 acres. Pure has staked Phillips 1, SW SE NW 31-5n-8ecm, on the south end of its block and about 2½ miles south of oil and gas production in the Keyes pool. Along with continued development in eastern Cimarron County there is evidence of increasing interest in the western part of the county with a number of geophysical crews reported in the area. The Texas Company and Stanolind Oil & Gas Company have large acreage concentrations in the county.

McClain County: A second Hunton lime producer looms for the deep Washington pool. The Carter Oil Company's McAlister 1, CSE SE 8-7n-3w, about ½ mile south of the pool's only Hunton lime producer, recovered 300 feet of clean oil on drill-stem test between 9662-86 feet, Hunton being logged at 9661 feet. Hole is being made below 9700 feet with the well projected to the Bromide sand at approximately 10,600 feet, which is the principal producing horizon for the pool.

☆ Kansas

Discovery in Rooks County Swabs 40 Barrels Hourly

Rooks County discovery swabs 40 barrels of oil an hour to open new pool southeast of Barry; oil strike looms for Rush County southeast of abandoned Greenwalt area; Bridgeport to test prospective Pratt County pool opener; Bennett & Roberts completes big well in Stoltenberg pool.

Rooks County: H. H. & B. Drilling Company opened a producing area about

Wells Completed in United States in Week Ended September 28, 1946

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second or third issue of each month. More detailed data on wildcats published in third or fourth issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama												1	12	27
Arizona													1	
Arkansas									2	2	2	9	138	141
California	23				23				4	4	27	44	1,368	1,624
Colorado	3				3						3	7	111	29
Florida	1				1				1	1	2		19	11
Georgia													2	6
Illinois	31			12	43	1	3		13	16	60	39	1,660	1,440
Indiana	6			5	11				1	1	12	10	379	252
Iowa														1
Kansas	24	5	2	3	34	1			8	8	43	31	1,517	1,254
Kentucky	3			1	4						4	7	473	450
Louisiana	13	3		5	21	1	1		7	8	30	25	961	774
North Louisiana	7	3		4	14	1			3	3	18	20	542	298
South Louisiana	6			1	7		1		4	5	12	5	419	476
Michigan	3	5		5	13				2	2	15	16	581	574
Mississippi	3				3				2	2	5	7	165	286
Missouri													22	40
Montana	1				1						1	6	192	165
Nebraska													3	3
New Mexico	9			2	11				2	2	13	13	320	318
New York	15		10		25						25	25	884	852
North Carolina													1	1
Ohio	10	14		10	34						34	37	905	719
Oklahoma	26	7	1	15	49	4					53	85	2,095	1,764
Oregon													2	
Pennsylvania	27	8	15	1	51						51	52	2,312	2,215
South Dakota									1	1	1		1	
Tennessee													2	3
Texas	87	5	2	19	113	3	7		28	35	151	148	6,016	5,446
E. Tex. Bor. Co.'s												2	127	76
Rest of E. Texas	6			1	7				3	3	10	18	403	167
North Texas	22		2	8	32				8	8	40	35	1,709	1,305
W. Central Tex.	2			4	6				7	7	13	12	475	363
West Texas	30			3	33	2	2			2	37	31	1,284	1,325
Tex. Panhandle	4	3		1	8						8	6	276	463
G. Coast, Upper	11				11		1		2	3	14	7	489	524
G. Coast, Lower	12	2		1	15	1	3		1	4	20	24	823	778
Southwest Texas				1	1		1		4	5	6	8	307	375
S. Central Texas									3	3	3	5	123	70
Utah													3	
Virginia													2	
Washington													1	1
West Virginia	3	16		4	23						23	18	561	603
Wyoming	2	1			3						3	4	118	116
Total U.S.	290	64	30	82	466	10	11		71	82	558	584	20,827	19,115

* Includes distillate wells. † Includes salt water disposal wells.

a mile southeast of the Barry pool at Hilgers 1, NE NE NE 13-9s-19w, which swabbed 40 barrels of oil an hour from Arbuckle lime and was shut in for tanks. The wildcat topped Lansing lime at 3237 feet and reported 3 good oil shows from 3275-3406 feet before topping the Arbuckle at 3479 and drilling to 3484 feet, total depth. The strike is at the northern limit of the Central Kansas Uplift where some good pool wells have lately been completed.

Rush County: About 2 miles southeast of the abandoned Greenwalt pool, Magnolia Petroleum Company's Christenson 1, SE SE SW 28-19s-16w, loomed as a prospective pool opener as operator set oil string to test shows in the Lansing and Arbuckle sections. Lansing was had at 3466 feet with the shows reported between 3481-85 feet. Arbuckle lime was cut at 3771 feet and the section was oil spotted and stained to 3848 feet, total depth.

Pratt County: In the southern part of the county, the Bridgeport Oil Company has erected tanks and was preparing to take potential at Pride 1, NE NE NE 24-29s-13w, prospective pool opener about a mile southwest of Bridgeport's recent discovery north of the town of Sawyer. On 15-hour flow test the well produced 140 barrels of oil from Viola lime between 4482-90 feet, total depth. Meantime, Lion Chemical Company's Jo 1, SW SW SW 33-26s-13w, ½ mile east extension to the new Chance pool, swabbed 400 barrels of oil in 32 hours from 10 feet of Arbuckle lime topped at 4443 feet.

Ellsworth County: Additional drilling along the western flank of the Stoltenberg pool was assured with the completion of Bennett & Roberts Drilling Company's Breford 1, NE NE 3-17s-10w, which has been assigned a daily potential of 2525 barrels per day, and is among the biggest wells completed in Kansas this year. Production is from Arbuckle dolomite between 3265-91 feet.

☆ New Mexico

Chaves County Caprock Pool Is Given Two Producers

Two producers completed in Caprock pool of Chaves County; oil shows logged by Lea County outpost; Penrose completes Paddock area well, will deepen another.

Chaves County: Two good flowing producers have been completed in the Caprock pool. They are Great Western Producers, Inc.'s, State 1, in 12-13s-31e, which flowed 84 barrels of oil in 16 minutes through casing at 3047 feet, and that company's Maxwell State 1, in 12-13s-31e, completed for a flow of 216 barrels of oil in 10 minutes from pay at 3036-37 feet. The flows came while making production tests.

Lea County: Testing is under way at Barnsdall Oil Company's Hardy 1, in 29-21-37, which had good oil shows from 6400-500 feet. The test is a 1⅓-mile northwest outpost to the Drinkard area, southeastern portion of the county.

Paddock Area: Neville G. Penrose, Inc.'s, Fort Worth operators, have completed Hinton 8, in 12-22-37, Paddock area, for 16 barrels of oil per hour through perforations at 5191-5203 feet. The completion followed acidization with 2000 gallons. The firm has skidded rig at the Boyd 1, CNW SW 23-22-37, an oil producer. This well will be deepened to the Drinkard pay level, from 3684 feet. The well is a ¼-mile west outpost to the Paddock area.

☆ West Texas

Stanolind Stakes Offset To Winkler County Strike

Stanolind stakes offset to Winkler County discovery; Andrews County test flows oil on drill-stem test; Magnolia's Bush 1 makes good oil flow; Mitchell County discovery completed for 75 barrels in 12 hours; drill-stem test recovers gas in Ector County test; Glasscock County wildcat plugged back to test.

Winkler County: Stanolind Oil & Gas Company has staked Mack Taylor 1-B, ½ mile north of Mack Taylor 1, Devonian discovery. The test, scheduled for 8500 feet, will test the Devonian. Location is 660 feet from the south and west lines of the north half of Sect. 8, Block B-2, P. S. L. Survey. Stanolind's Taylor 1, which failed to produce from the Ellenburger topped at 10,245 feet, was plugged back to the Devonian, topped at 8040 feet, and was completed for a flow potential of 617 barrels of oil per day through ¼-inch choke on 2-inch tubing at 8050 feet. Plugged-back depth is 8730.

Andrews County: The Atlantic Refining Company's Texu 2-B-11, Martin field, flowed pipe line oil on a drill-stem test at 8750-836 feet, and crew closed the tool after 63 minutes, and will pull pipe. The well made a strong blow of air after 48 minutes, flowed out an 800-foot water cushion, followed by mud in 15 minutes. The test is in Sect. 1, Block 11, University Lands.

Magnolia Petroleum Company's Bush 1, wildcat 11 miles west of Andrews, P. S. L. Survey, flowed 117.5 barrels of oil in 24 hours from a plugged-back depth of 6980 feet, with testing continuing. The well cut 2.8 percent basic sediment and 2.8 percent water and was still swabbing. Shows of gas on test were reported increasing. The wildcat is in Sect. 3, Block A-47.

Mitchell County: Norman & Roche's Coleman 1, H. & T. C. Survey, a discovery well, has been completed at total depth of 2770 feet for 75 barrels of oil in 12 hours, after being treated with 1500 gallons of acid. C. E. Beavers & Son, drillers of the discovery well, have staked Coleman 1-A, 330 feet from north and east lines of the east half of the southwest quarter of Sect. 70, Block 97, H. & T. C. Survey, located 660 feet due south of the discovery well. The test is scheduled to 3000 feet, or to the pay, using rotary tools.

Ector County: A 75-minute drill-stem test at 8546-80 feet in the Ellenburger recovered 240,000 cubic feet of sour gas daily and a show of oil at Humble Oil & Refining Company's Cowden 1-B, Sect. 11, Block 45, T-2-N, of the Texas & Pacific Survey, North Goldsmith area. Tool was shut-in 24 minutes following the 75-minute test. A small head of oil in 8 minutes was recovered, and the well then made oil and gas for 30 minutes. Operator's estimated total recovery was approximately 7370 feet, or 104 barrels of dark, green pipe line oil of 40.1-gravity. The well will be deepened a few feet below the present total depth of 8580 feet, and resume testing. Humble's Cowden 1-C, a mile north of the discovery well of the Goldsmith area, was to resume drilling at 8084 feet in lime and shale, thought to be the Montoya of the Upper Ordovician.

Glasscock County: Shell Oil Company's Clark 1, wildcat in Sect. 5, Block 32, T-4-S, Texas & Pacific Survey, and 8 miles north of Garden City, was running 5½-inch casing, after plugging back from 10,970 feet to 9795 feet. Reports stated that the well had bottomed in granite, and that testing will continue up the hole.

☆ Central West Texas

Palo Pinto Production East Extension Attempt Fails

Attempt to extend Fisher County Palo Pinto reef production east fails with Jones County test; new test started in Noodle pool; Taylor County wildcat will go to 4500 feet.

Jones County: An attempt to extend Fisher County Palo Pinto reef production about 3000 feet east has met with failure. However, the well may be successfully completed in another pay horizon. The attempted extensioner is Crown Central Petroleum Corporation's Butler 1. Crew is attempting to complete the well in the Canyon sand, from 4230-38 feet. This zone was shot with 30 quarts after a good oil show was logged. Location is in the William Littlefield Survey.

Rigging up has been completed on Roark, Hooker & Roark's Winters 5, a 5400-foot rotary test to the Ellenburger in the Noodle pool, 12 miles northwest of Merkel. The project is in Sect. 40, Block 18, Texas & Pacific Survey. It is 170 feet southwest of the same operators' Winters 3, which produces from the Swastika at 2971 feet.

Taylor County: A 4500-foot wildcat has been staked 11 miles south of Merkel. The projected test, on land which was part of the Camp Barkley military reservation from 1941 until this year, is Paul P. Steed et al's Norwood et al 1, 990 feet from north and east line of Sect. 10, Block 5, Texas & Pacific Survey. This is the first test to be drilled in this released area, and at least 1 other test in the area is projected.

☆ North Texas

Grayson County Test Fails To Free Stuck Drill Stem

Grayson County test has stuck drill stem; Archer County test will go to 5100 feet.

Grayson County: Attempts have failed to recover a stuck drill stem at the L. O. McMillan & Sherman Hunt, Jr.'s Ida Thorn 1, Samuel Stewart Survey, wildcat in the Delaware Bend area 10 miles northwest of Gordonville. The hole has been plugged off with 500 sacks of cement and crew was preparing to cut the pipe at 2000 feet, set a whipstock, and drill a new hole to test porous sand at 500 feet. The drill stem stuck when the well attempted to blow out.

Archer County: Location for a 5100-foot rotary wildcat has been staked by

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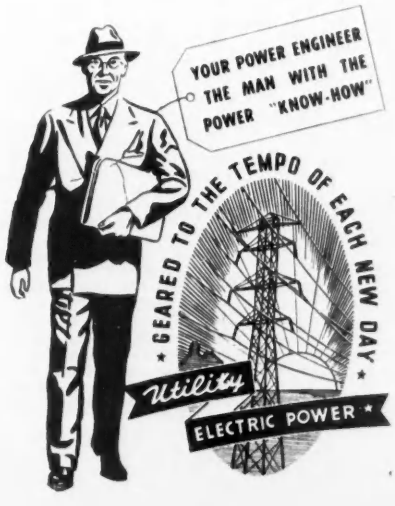

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Frank Wood and A. R. Dillard. The test is the Mangold 1, 1320 feet from the north line and 330 feet from the east line of Block 8, Mangold Subdivision, ¾ mile north of Mankins. Drilling on the test will get under way shortly.

☆ East Texas

Humble's Smith County Test Is Coring Without Shows

Humble's Smith County test coring with no shows; 2 wells started in Mt. Sylvan field by Humble; Wood County wildcat nears contract depth with no commercial shows; Manziel's second Sub-Clarksville oiler successful; production tests under way on 2 Limestone County wells.

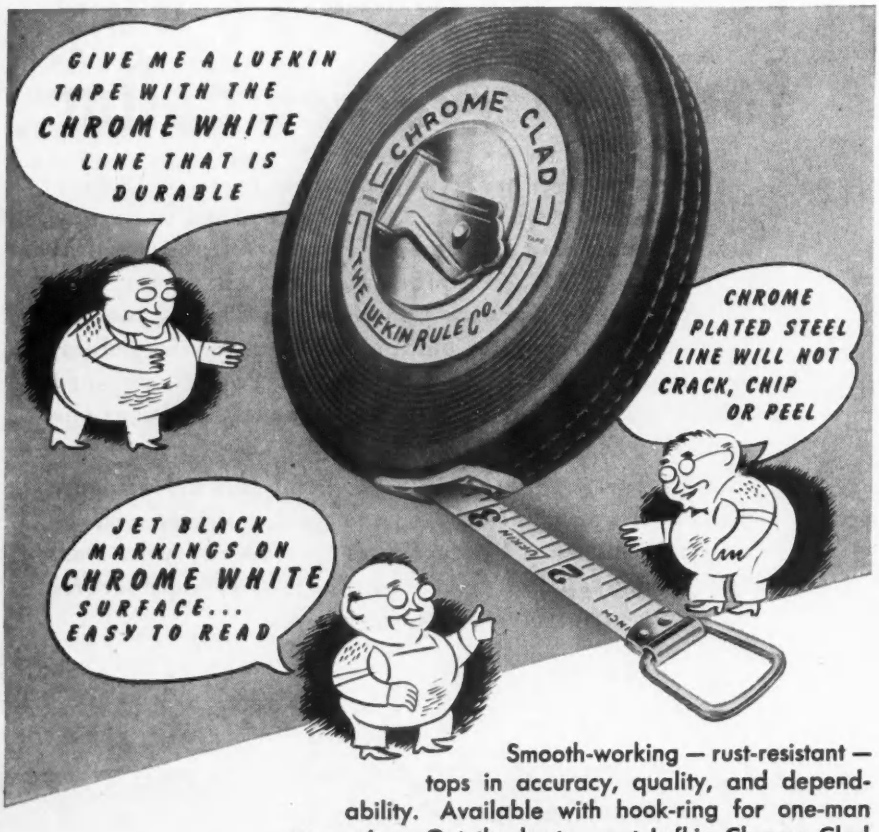
Smith County: Humble Oil & Refining Company's Moseley 1, D. Martin Survey, is coring with no shows after reaching 7410 feet. The well, 1340 feet north and slightly west of the Mt. Sylvan discovery well, cored 10 feet of oil sand from 7370-80 feet, and recovered 3 feet of oil sand in a core from 7280-89 feet.

Two new wells have been started in the Mt. Sylvan field of Smith County by Humble. They are the Pool 2, 1700-foot southwest offset to the discovery well (the Pool 1), and 660 feet from the west line and 1980 feet from the north lines of the William Saunders Survey. West of the Moseley 1, Humble is setting up at Moseley 2, 500 feet from the west line and 1800 feet from the north line of the D. Martin Survey. It is 1100 feet west of Moseley 1.

Wood County: Benton & Weaver's McKenzie 1 is drilling below 6337 feet toward the contract depth of 6500 feet without having encountered commercial showings. The well is 2 miles east and north of Alba, in the J. P. Wood Survey. The wildcat tested salt water up the hole, in the Sub-Clarksville, and failed to find production in the Woodbine.

The second Sub-Clarksville oiler with successful completion is L. O. McMillan's Holley 1, J. M. Moore Survey, Manziel field. The well pumped 132 barrels of 17-gravity oil per day through perforations at 4170-94 feet, with total depth 4210 feet. Location is north of Lacy & Caraway's Shamburger 1-A, in the same survey, which was completed for 115 barrels of oil on pump from 4145-65 feet. The field produces also from the Woodbine, Paluxy, Rodessa, Pettit and Travis Peak.

Limestone County: Production tests have been under way on 2 Limestone County wildcats. C. W. Killough's Bell Arnett 1-A, 5 miles northwest of Groesbeck, P. Parella Survey, swabbed salt water from perforations at 5456-92 feet, and was to plug back for testing up the hole. Pay string is set at total depth of 5825 feet, and the well is credited with good possibilities in the Pettit at 5430-50 feet. Shows were logged at 5030-80 feet and in the upper Glenrose at 4410-4515 feet. J. V. Fleming's (Tyler) Ward 1, southwest of Mexia 14 miles, and in the P. Varela Survey, was reported making oil by heads through ½-inch choke from perforations in the Woodbine, 2864-78 and 2970-79 feet. Operator will test a third sand section at 2770-85 feet.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☆ East Texas Border

Waskom Area Has Producer; Huxley Test Ready to Quit

New producer registered in Waskom district; Huxley area test preparing to abandon.

Harrison County: Edgar C. Johnston's (formerly Rogers Lacy's) C. M. Abney 1, Holloway Survey, Waskom district, 3 miles southeast of this area's first flush producer, Johnston's Cargill 1, was reported completed. Initial production was given as 69 barrels of 40-gravity oil through ¼-inch tubing choke on 24-hour test, producing from the Travis Peak at 6016 feet. It also made 8 million cubic feet of gas from 5660 feet for a dual producer.

Shelby County: Humble Oil & Refining Company's Pickering Lumber Company 2, Woodfin Survey, Huxley area, tested at 3250 feet in the Comanche, and is reported preparing to abandon. It failed to make a commercial well in the Pettit at 6600 feet, although showing both oil and gas from that horizon.

Panola County: Delta Drilling Company's Christian 1, Nichols Survey, bottomed at 6469 feet, and cemented producing string. This well indicates pay possibility in the Pettit, and operators plan to test that lime and the Hill zone. Cores in the Travis Peak section failed to disclose anything.

Blowout Injures Worker

A gas blowout at Ashland Oil and Refining Company's Summerville 3, NW SE SW 36-32s-2e, 3 miles south of Oxford, Kansas, resulted in injury to a drilling crew man and damage estimated at approximately $25,000. The rig belonged to the H. H. and B. Drilling Company, contractors.

THE OIL MAN'S CALENDAR

SEPT. 30 and OCT. 1	Interior Department Discussions new Leasing Law, Denver
OCT. 1- 2	American Association of Oilwell Drilling Contractors, Annual Meeting, San Antonio, Plaza Hotel.
3- 5	AIME, Petroleum Division, Annual Meeting, Galveston, Hotel Galvez.
7- 9	American Society of Mechanical Engineers, National Conference, Mayo Hotel, Tulsa.
11	California Natural Gasoline Association Annual Fall Meeting, Los Angeles.
7-12	American Gas Association, Annual Convention, Atlantic City, N.J.
16-18	Texas Mid-Continent Oil and Gas Association, Houston, Rice Hotel.
24-25	AIME, Petroleum Division, Annual Meeting, Los Angeles, Ambassador Hotel.
24-25	American Association of Petroleum Geologists, Mid-Year Meeting, Biloxi, Mississippi, Buena Vista Hotel.
28-30	Independent Petroleum Association of America, Annual Meeting, Fort Worth.
NOV. 11-14	American Petroleum Institute, Annual Meeting, Chicago, Stevens Hotel.
21-23	Rocky Mountain Oil and Gas Association, Annual Meeting, Denver, Shirley-Savoy Hotel.
DEC. 4	New Mexico Oil & Gas Association, Annual Meeting, Artesia.
9-11	Interstate Oil Compact Commission. Quarterly Meet, Dallas, Adolphus Hotel.

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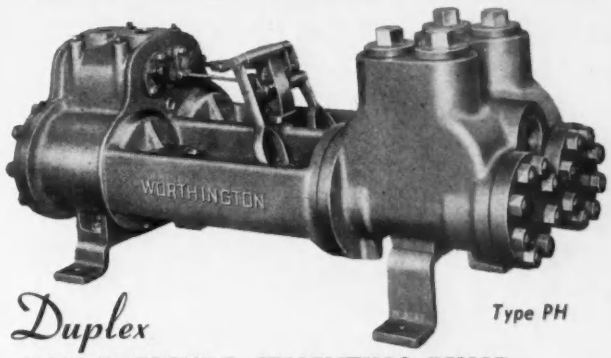

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As a reader of The Oil Weekly you're familiar with the scores of practical ideas to be found in every issue. Many of your associates would find the information equally helpful. Send us their names, and we'll acquaint them with this easy way of keeping in touch with new developments, improved techniques, and money-saving methods in drilling, producing, and pipe line operations. You'll be doing your friends a favor—we'll appreciate it too!

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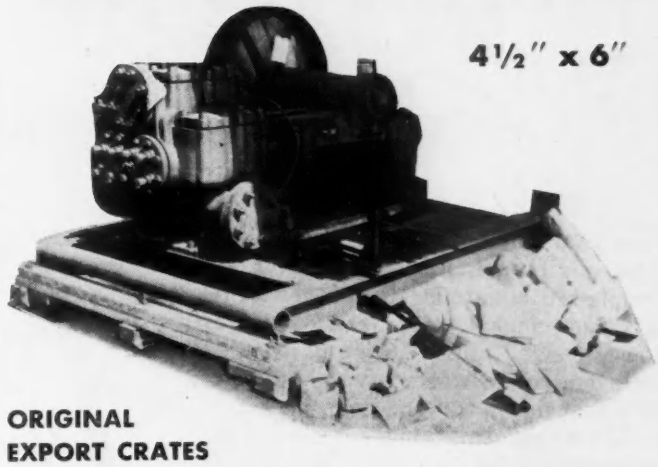

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☆ Southwest Texas

Sun Field Outpost Has Oil Recovery on Drill-Stem Test

Sun field outpost recovers oil on drill-stem test; South Rincon well being completed in gas sand; Piedras Pintas (South) well completed for good oil flow; casing set in San Jose test.

Starr County: Humble Oil & Refining Company's Pena et al 1, outpost ½ mile north of the southeast flank at Sun field, recovered 500 feet of oil and 70 feet of oil-cut mud during a drill-stem test at 4626-32 feet, and then drilled on. A previous drill-stem test at 4247-53 feet recovered 15 feet of condensate and 45 feet of gas-cut mud. This test is in CCSD&RGNG Survey 241.

W. H. Holland's M. M. Garcia 1, northeast of the discovery well at South Rincon, missed the 3400-foot pay sand and plugged back to complete in a gas sand at 2925-37 feet. Drilled to total depth of 3930 feet, 5½-inch casing was set at 3030 feet. No gauge had been taken of the gas flow but shut-in pressure was 1150 pounds. This well is in the northwest corner of Block 21, Porcion 91, and 2200 feet north-northeast of Kennard's Garcia 1, discovery well for the field.

Duval County: H. H. Howell's The Texas Company 2 has been completed for a potential of 211 barrels daily at Piedras Pintas (South). Flow was through 3/16-inch choke with gas-oil ratio 540/1. Production is from perforations at 3743-52 feet and total depth is 4074 feet. This well is in BS&F Survey 187, A-73.

McMullen County: V. G. Schimmel's Kountze 2-C, San Jose field, 100 feet southwest of the 1-C junked hole, has set 5½-inch casing for completion after coring to total depth of 1169 feet. An average of 9 percent saturation in the top 9 feet of the pay sand was recovered during coring operations. This test is in ETRR Survey 5, A-188, Block 5.

☆ South Central Texas

Gonzales Test Near 3200 Feet; Milam Wildcat Hits Crevice

Gonzales County wildcat drilling below 3140 feet; Milam County wildcat hits crevice; Manor area test below 1078 feet; Sabinal wildcat loses returns in crevice; Leona River outpost plugged.

Gonzales County: K. D. Owen-G. D. Beauchamp's Frank Kunetka 1, wildcat 4 miles northwest of Cheapside, is drilling below 3140 feet after running electric log to 3000 feet. This test is in the J. D. Kirkpatrick Survey A-310, and is scheduled for 5700 feet.

Milam County: Rio Seco Oil Company's James Amberson 1, wildcat 3 miles north of D'hanis, was waiting on casing to set through a crevice. The test drilled to 800 feet where it ran into the crevice. Scheduled for total depth of 5000 feet, it is in the G. Van Norman Survey 436.

Travis County: E. R. Marts' M. H. Deats et al 1, wildcat 8 miles south of Manor, is drilling below 1078 feet after topping the Austin chalk at 1008 feet. This test is in a 200-acre lease, Thos. Toulson Survey 12.

Uvalde County: Bennett & Sorrell's Mary Rehm 1, wildcat 10 miles southwest of Sabinal and just west of the Medina County line, lost returns in a crevice at 1140 feet while drilling at 1650 feet. Projected depth of the wildcat is 4500 feet.

Zavalla County: The Texas Company's George West 4, outpost at the Leona River field, has been abandoned at 4444 feet. This dry hole is in Sect. 5, T. C. Railway Company Survey A-781, Block 4, on a 4675.8-acre lease.

California Standard Awards Contract for Laboratory

Standard Oil Company of California has announced award of a contract for construction of a process laboratory building at the Richmond plant of California Research Corporation, Standard subsidiary.

The contract was won by Swinerton & Walberg Company with a bid of $732,360. Work will begin immediately.

The construction will be part of the $10 million replacement, improvement and new construction program announced for Richmond refinery and California Research Corporation early this year.

Texas Directory Issued

A new directory of Texas oil and gas operators has been released by R. W. Byram & Company, Austin consulting geologists and petroleum engineers.

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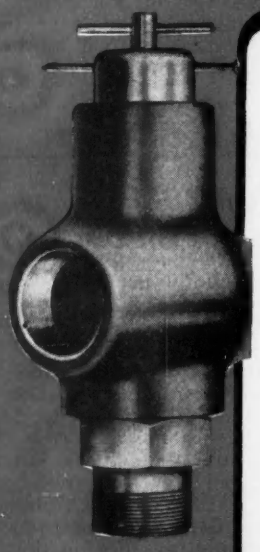

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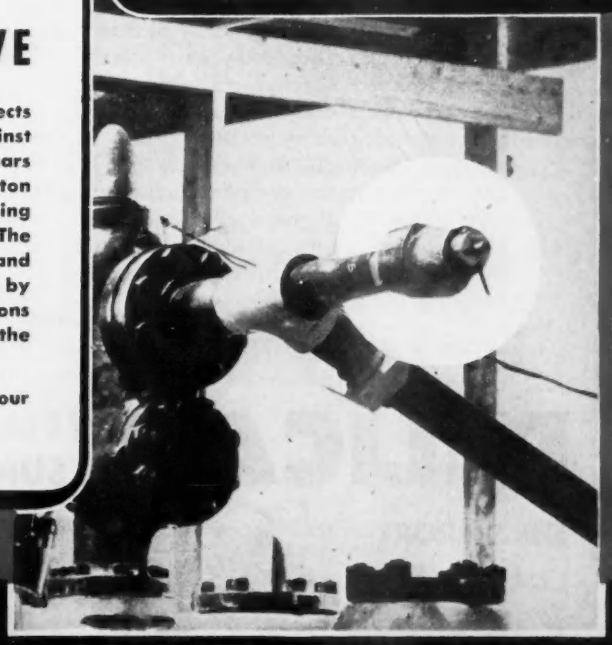

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☆ Lower Texas Coast

Midway Field, San Patricio County, Given New Pay Zone

New pay zone discovered at Midway; Cosden-Wilcox outpost swabs down for production test; southwest outpost at Strauch-Wilcox cores Luling sand; second 6000-foot sand producer at North Minnie Bock completed.

San Patricio County: F. M. Boykin, Jr., et al's H. H. Hutto 1, southwest flank of Midway field, has been completed in a new pay zone for the field. The well flowed 170 barrels of oil daily through 5/32-inch choke with tubing pressure 650 pounds, casing pressure 900 pounds, and gas-oil ratio 400/1. Production is from perforations at 5128½-30½ feet in a sand topped at 5107 feet and which will be called the "Hutto" sand. Total depth is 5143 feet in sidetracked hole. The well is in Sect. 81, 136 feet north of T. H. Davey's Hutto 1, a junked hole.

Bee County: Mackhank Petroleum Company's W. D. Walton et al 1, outpost ⅔ mile south-southwest of the Freeland 1 discovery well at Cosden-Wilcox field, swabbed down at 3000 feet for production test in the Wilcox zone. Casing is perforated at 7068-71 feet and total depth is 7322 feet where 5-inch liner is set. Previously, 7-inch liner had been set to 6992 feet before coring into the Wilcox. The test is in John Pace Survey A-247.

Mills Bennett's C. G. Rice 1, outpost 4500 feet southwest of the company's Berger 1 condensate discovery at Strauch-Wilcox field, is coring the Luling sand after making drill-stem tests in the Slick sand, topped at 8000 feet. A drill-stem test at 8000-05 feet recovered 750 feet of the 2000-foot water cushion and 180 feet of mud cut with condensate. A test at 1010-15 feet failed when the seat slipped and a test at 8018-34 feet recovered 3 joints of mud.

Nueces County: The Atlantic Refining Company's J. H. Wright 1, North Minnie Bock field, has been completed as the second 6000-foot sand producer in the field. The well flowed 108 barrels of oil daily through ⅛-inch choke from perforations at 5994-98 feet with tubing pressure 650 pounds and gas-oil ratio 940/1. The well is over a mile northwest of Louis Crouch's Parr 2, discovery well in the new pay zone for the field.

☆ Upper Texas Coast

Orange Strike Tests Up Hole; Double Bayou Outpost Has Gas

Orange County discovery oiler testing up hole; Double Bayou outpost completed in new gas sand; Clodine area wildcat discovers oil; Nash Dome test has good oil show.

Orange County: Hinkle Drilling Company et al's G. M. Adcock 1, wildcat approximately 2 miles northwest of Port Neches field production, flowed an estimated 7 barrels of oil hourly on initial tests. With production string of pipe set around 8900 feet, perforations were made at 8774-78 feet for a drill-stem test using ¼-inch bottom and ⅛-inch top choke. Oil was 46 gravity and considerable gas accompanied the oil flow. These perforations have been squeezed off and other tests are being made up the hole, where it is reported the sands look better on the basis of cores and electrical log. The sand tested is the lowest of 4 cored during drilling operations. The 4 sands total 120 feet and are reported to be in the Lower Frio formation.

Chambers County: Humble Oil & Refining Company's Double Bayou Unit 2-A, west outpost at Double Bayou field, has been completed in a new deep gas sand. The well flowed 240,000 cubic feet of gas with 7.2 barrels of condensate daily through ⅛-inch choke with 2070 pounds flowing pressure on the tubing. Production is from perforations at 9000-07 feet and total depth is 9130 feet in sidetracked hole. The well is in the R. O. W. McManus Survey, Abstract 187, 3875 feet west and slightly north of the No. 1 well.

Fort Bend County: O. J. Martin's H. B. McCrary et al 1, wildcat several miles southwest of the Clodine field, on initial tests flowed an average of 50 barrels of oil daily, flow being through 3/16-inch choke with low and fluctuating gas pressures. Total depth is 7625 feet with 5½-inch pipe cemented on bottom and perforated for completion at 7320-28 feet. A test was made previously in a sandy shale section at 7567-7572 feet where a flow of water with some oil and gas was encountered, but the flow died after a short while. The discovery is in the Jas. Knight & W. C. White Survey, Abstract 46.

Danciger Oil & Refining Company's Theodor Meier 3, north flank of Nash dome, was showing for a potential of 156 barrels of oil daily during initial tests of perforations at 5934-46 feet. Flow is through ⅛-inch choke with 640 pounds flowing pressure on tubing and no water. Danciger reopened production on this previously abandoned dome in October, 1945, production coming from steeply dipping Frio sands near the edge of the salt. The Meier 3 will be the third producing well for the field.

☆ South Louisiana

South Flank of Choupique Prospect Has Oil Discovery

Oil discovered on south flank of Choupique prospect; Hayes extension test drilling below 12,203 feet; Lake Pontchartrain wildcat flows gas, while another wildcat in the lake is abandoned.

Calcasieu Parish: Union Sulphur Company's Eugene Ellender et al 1, south flank of the Choupique prospect, has discovered an oil field. On initial test the well flowed 93 barrels of 40.7-gravity oil daily through 14/64-inch choke with 3100 pounds flowing pressure on tubing and 300 pounds pressure on the casing. Gas-oil ratio was 12,781/1. Production is from perforations at 8825-31 feet. The well is 5 miles north of production in the West Hackberry field.

Gulf Refining Company's Calcasieu National Bank et al 1-F, extension test at Hayes field ¾ mile east of nearest production, is drilling below 12,203 feet after cementing a hole in the pipe at 7000 feet. Scheduled total depth is 13,000 feet in the Frio.

Jeff Davis Parish: Stanolind Oil &

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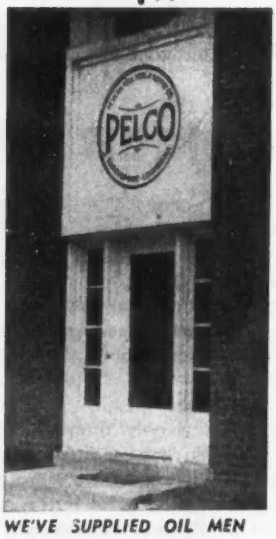

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Gas Company's South Jennings Unit 8, in 15-10s-3w, South Jennings field, drills ahead after setting 7-inch pipe to 10,725 feet. Hole was dug to this depth where it started losing returns. Scheduled total depth is 12,000 feet. The test is reported to have sands showing gas and condensate at 7010-20 feet, gas sands at 8115-20 feet and 8190-8200 feet.

St. Tammany Parish: The Atlantic Refining Company's State 1-A, wildcat in Lake Pontchartrain on State lease 318, has opened a gas field. On initial gauge the well flowed 6,200,000 cubic feet of dry gas daily through ⅜-inch choke, and was then shut in. Flow was from perforations at 7180-88 feet and total depth is 11,052 feet. Other tests were made at 9238-77 feet where it failed to show anything, 8440-90 feet where a slight flow was recovered, and 7780-90 feet with slight flow.

A dry hole for Atlantic is State 1-D, also in Lake Pontchartrain, Unit 2, Block 4, Township 11s-9e. It hit a salt water flow while drilling at 10,385 feet and was abandoned.

☆ North Louisiana

Ada Field, Webster Parish, May Get First Oil Production

Ada field may get first oil production; favorable Caddo wildcat develops salt water; Chatham field deep test bottomed at 11,785 feet.

Webster Parish: Hope Producing Company's Marion A. Davis 1, NEc 3-17n-8w, may make the first oil producer in the Ada field. Cores from 5317-29 feet in the Rodessa recovered lime showing oil. A 20-minute drill-stem test of the same interval recovered 900 feet of estimated 34-gravity oil and 180 feet of oil-cut mud. Maximum working pressure, which was building when the tool was closed, was 65 pounds. Drilling continues below 5415 feet. Oil showings in the well are 100 feet above the gas pay sections in the field's 3 wells, which produce from the Rodessa.

Caddo Parish: After a salt water show developed in the Pettit zone, Joe Burnham et al's Noel 1, wildcat in the Longwood-Mooringsport area, continued testing the Hill zone at 4545-65 feet, where shows were found, along with the Paluxy below 2600 feet, and other favorable zones above the Pettit.

Jackson Parish: Shell Oil Company's Tremont Lumber Company 3, 21-15-1, deep test in the Chatham field, was preparing to test after setting 7-inch production string to 11,440 feet, and is bottomed at 11,785 feet.

☆ Arkansas

Wildcat West of Lewisville Completed As Producer

Wildcat ½ mile west of Lewisville townsite, Lafayette County, completed as producer; Pace City discovery put on pump.

Lafayette County: McAlester Fuel Oil Company's Adams Estate 1, SW NW 16-16-24, ½ mile west of Lewisville townsite, flowed by heads at the rate of 100 barrels of oil in 24 hours. The wildcat was perforated between 3977-92 feet, possibly the Hill zone of the Rodessa, after hole was bottomed at 4358 feet. The well may be a continuation of the new Spirit Lake field recently opened by Stewart & Lewis' H. Moore Estate 1, NW SE 14-15-25, 4 miles west of the McAlester test. The Adams Estate 1 will be put on pump.

Ouachita County: Joe Mucher's Josie Smith 1, NE SE SW 30-15-17, discovery well of the Pace City field, pumping from 2778 feet, is yielding 50 barrels of oil daily.

Turner & Keith's Girvis Halton 1, wildcat in SW NW NW 18-15-18, 3 miles northeast of Stephens, which reported a richly saturated Blossom sand at 2118 feet, is reported shut down, waiting for a large rig to drill to 4000 feet. Present depth is around 2400 feet.

☆ Mississippi

Baxterville Outpost Appears Certain to Be Producer

Baxterville outpost in Lamar County appears to be certain gas and oil producer; Brookhaven field outpost continues to test.

Lamar County: Gulf Refining Company's John Q. Butler 1, SWc SE, which is attempting to extend the Baxterville field 1½ miles northeast, is reported to have made encouraging tests. The well is running high structurally and is drilling below the 7000-foot zone. In the same field Gulf's I. H. Bass 3, NWc SE SE 7-1n-16w, has been suc-

Big Smoothies

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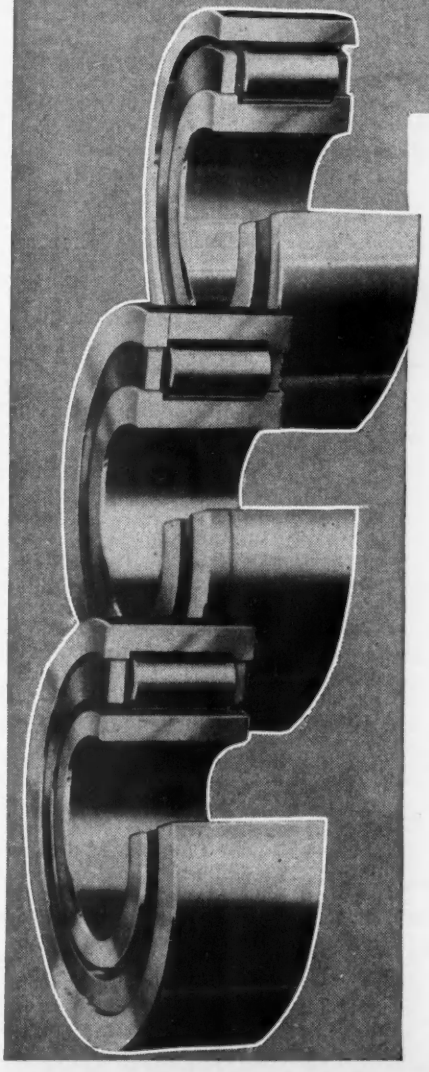

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AMERICAN Heavy-Duty ROLLER BEARINGS

cessfully completed with an initial flow of 516 barrels of 14.7-gravity oil per day from several sets of perforations opposite the Massive sand zone below 8700 feet.

Lincoln County: Roeser & Pendleton's Cora M. Ballard 1, SW SW 17-7n-7e, which has held the center of attention here because of its discovery of more than 50 feet of saturated sand in the Massive sand section has set production string and was preparing to test the section further. The Ballard is an outpost about a mile southwest of production, and is running lower structurally than any other producing well in the field with saturated sand section indicated from 10,396-10,447 feet. Sun Oil Company's Leon Case 1, in the northeast corner of the same section of Brookhaven, continues to have trouble establishing production and is preparing to run mud acid. On a drill-stem test with packer at 10,261 feet, the well had a good blow and later swabbed oil and wash water, but when tubing was pulled salt water was found to be present.

Forrest County: The Superior Oil Company's Cassie Bradford 1, SEc SW NW 1-3n-13w, record deep test, is drilling below 14,467 feet after running electrical survey. No shows have been announced.

Adams County: The Ohio Oil Company's Geo. W. Armstrong 1, SEc 12-5n-3w, Massive sand prospect, is working below 9360 feet in chalk. The potential producing Wilcox section was cored extensively between 4684-6571 feet with no shows indicated. The California Company's Ella G. Lees 20, 29-7n-1w was preparing to make production test on its development well in the Cranfield field after perforating 2 sections of the Massive sand section at 10,246-250 and 10,276-294 feet.

Franklin County: California's Homochitto Lumber Company 3, 29-7n-1e, was preparing to complete for an increase in production in the Franklin County section of the Cranfield field. Casing was perforated at 10,282-314 feet and tested out at the rate of 226 barrels of 39.3-gravity oil per day.

Jefferson County: Humble's J. Fred Gordon B-1, 44-9n-1w, is drilling below 6927 feet without encouragement. Drill-stem test at 6836-60 feet recovered only salt water and mud. Humble's J. K. Straas B Unit 1, 14-9n-1e, is preparing to complete for the sixth producer in the Fayette field after good quantities of gas and oil were recovered in tests from the Massive sand zone. A drill-stem test at 9620-30 feet recovered at the rate of 336 barrels of oil and 8,400,000 cubic feet of gas. Gravity of oil was 43.1.

Florida

Humble Oil & Refining Company's Gulf Coast Realty 8, SW SE 19-48s-30e, Sunniland field of Collier County, has been successfully completed for the second development in the field this year. The well, which is ½ mile south of Gulf Coast Realty 6, had an initial flow of 527 barrels of oil per day through ¼-inch tubing choke, though Realty 6 flowed only 227 barrels per day through 5/32-inch choke. Production was from lime and dolomite at 11,564-569 feet. Gravity of oil was 24.5. Humble will start work shortly on Gulf Coast Realty 9, ¾ mile west and slightly north of No. 8. Humble's Lee Cypress Company 1, SW SE 28-47s-29e, wildcat, is bottomed temporarily at 3222 feet in dolomite in an effort to recover several lengths of stuck drill pipe.

Monroe County: Gulf's State 1, SWc 2-67s-29e, is drilling below 12,019 feet in lime and anhydrite with no shows indicated below the 11,000-foot levels. Cores from 10,800-912 feet had slight shows of oil.

☆California

Strike Near Mountain View Field Yields 200 Barrels

New discovery southeast of Mountain View field in Kern County makes 200 barrels; interest shown in Coastal area with 2 new wildcats scheduled for Monterey and San Mateo counties; water intrusion cuts oil production to 12 barrels in Newhall discovery well; East Los Angeles wildcat quits at 12,930 feet.

Kern County: Union Oil Company has made a discovery about a mile southeast of the Mountain View field in 3-31s-29e. Operator's DiGiorgio 71 flowed by heads at the rate of 200 barrels of 20-gravity clean oil and is being placed on pump. Total depth is 4705 feet. Production is believed from the Santa Margarita formation, although the schist is also open to production. Top of the oil sand was placed at 4505 feet and top of the schist at 4540 feet.

Considerable interest has been shown by wildcatters in this general area in the last 6 months and Union's discovery is the second in the last 60 days. Cleveland Oil Company previously made a discovery of what appears to be an accumulation against a fault in 29-30-29.

Developments were lacking in San Joaquin Valley's deep tests. The deepest of a dozen important wildcats, Pacific Western Oil Corporation's National Royalties 1 in 5-26s-22e, is drilling below 14,800 feet, with no important showings reported.

Signal Oil and Gas Company and Honolulu Oil Corporation will drill a joint wildcat in the Williams Anticline area in 6-28s-19e. Operators have staked Carpenter 1. Site is about ½ mile southwest of a 2500-foot duster drilled by General Petroleum Corporation.

Monterey County: Indicating an increasing interest in this area, The Texas Company is preparing to drill Currell 1, a wildcat in 4-21s-8e, 5 miles south of King City. Twenty years ago Excelsior Oil Company drilled an inconclusive test in Sect. 4 which stopped at 685 feet. Texas is drilling Aurignac 1 in 4-23s-10e which is presently bottomed at 4200 feet. Continuing sand trouble may prevent a conclusive test. To the west in Sect. 6, Chanslor-Canfield Midway Oil Company is drilling San Ardo 6-G1 below 6510 feet. About 100 wildcats have been drilled in the county to date without a commercial discovery.

San Mateo County: Progressive Solvents Corporation has staked a wildcat near San Gregorio and south of Half Moon Bay, where seepages of high gravity oil and gas from Pliocene and Miocene sediments and showings in shallow water wells have encouraged sporadic attempts to obtain commercial production for over 75 years. The new try, Walter Moynier 1, is in 20-7s-5w.

San Luis Obispo County: Palo Robles Mutual Development Association's wildcat near Paso Robles in 3-26s-12e has been drilled to 4200 feet. Operator has decided to go to the Vaqueros and is rigging heavier equipment.

Los Angeles County: Water trouble in Shell Oil Company's new discovery near Newhall, Braille Institute 1 in 2-3n-16w, is believed to indicate an edge condition. Production on the pump has dropped in the last week from 75 barrels of clean oil to 12 barrels net oil and 50 barrels of water. A second well can be located more favorably, it is believed.

In the East Los Angeles field, Richfield Oil Corporation tested Union Pacific 2, but only a small amount of oil and salt water was recovered from the interval 8420-57 feet. Operator is coring ahead. Chanslor-Canfield Midway has abandoned its efforts to obtain production in Bandini 1, 21-2s-12w, and will convert it to a water well. Total depth is 12,930 feet. Recovery on the week's tests of the interval 9700-30 feet was all mud and water.

Santa Barbara County: Sunray Oil Corporation, Tulsa, has completed Donovan 3 in 10n-34w. The well is in the Santa Maria field on acreage acquired by Sunray last spring from Bel-Air Oil Company. Donovan 3 tested 100 barrels of oil per day and has been put on pump. Total depth is 4759 feet.

Pacific Northwest Exploration Program Is Planned by Union

Reese Taylor, president of Union Oil Company, said at a Seattle press conference that his company is prepared to spend "as much as it will take to carry out exhaustive oil exploration" in the Pacific Northwest.

Union has begun large-scale exploration on the Olympic peninsula. The company holds leases on about 700,000 acres of land, approximately half of which is state-owned.

Taylor said he thought there had not been sufficient work done in the Northwest to disprove oil possibilities.

☆ Rocky Mountain Area

Elk Basin, Wyoming, Strike Continues to Hold Interest

Interest remains on Stanolind's Madison discovery in Elk Basin field, Wyoming; Continental nearing Weber sand objective in Moffat County, Colorado; Amerada abandons final well in Fall River County, South Dakota.

Wyoming

Interest is still centered on the Madison discovery made by Stanolind Oil & Gas Company in Park County, Elk Basin field along the Wyoming-Montana line. Stanolind has been deepening Madison 38, NE SE NE 24-58N-100w, and on drill-stem test at 186 feet in the Madison, topped at 4350 feet, with tester open 1 hour, the well made 90 feet of mud and 2160 feet of gassy oil and oily mud through ⅜-inch bottom choke and 1-inch top choke. Flowing pressure was 250 pounds. Surprising feature of the well was that the oil was of 29.8 gravity, as compared with the 18-gravity crude made in the first drill-stem test between 4402-4425 feet. In the Garland field, 15 miles south of Elk Basin, Madison crude is 21 gravity and carries 3 percent sulphur. The Stanolind test is now coring below 4536 feet and may check the en-

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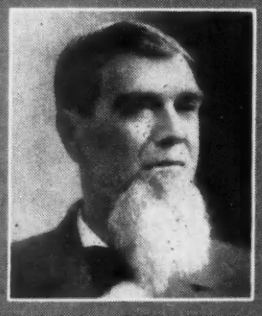

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tire Madison Section of an estimated 600 feet before completing.

At South Spring Creek, The Texas Company has tested oil in the Amsden formation at its Unit 3, C NW NW 13-49n-102w. The well is drilling below 4308 feet with Amsden topped at 4143. On drill-stem test at 4191-4245 feet, open 46 minutes, the recovery was 36 feet of mud, 276 feet of oil-cut mud and 122 feet of oil. This structure was discovered in 1929 and has produced about 40,000 barrels of black oil from 1 well in the Tensleep sand, but has been shut in for years.

Colorado

Continental Oil Company is nearing the Weber sand objective in a test of the Elk Springs structure at Smith 1, NW SE NW 30-5n-98w, Moffat County. The well is drilling below 5700 feet and Weber is expected around 5800 feet. This structure is 25 miles northeast of the Rangely field, Rio Blanco County, which now has 128 wells producing 26,000 barrels per day from the Weber sand. The structure has been drilled to shallow sands but has not been previously tested in the Weber.

Routt County: At Beaver Creek, Union Oil Company of California's Crawford 1, NE NE SW 32-4n-89w, is reported coring below 5450 feet and tentative top of the Weber sand was placed at 5300 feet. No drill-stem tests have been taken and operator now believes there is some question that the well is in the Weber objective.

South Dakota

Amerada Petroleum Corporation has abandoned its seventh, and final, test of blocks taken in Southwestern South Dakota and Western Nebraska. The well was M. Vorhees 1, SE NE SW 25-10s-8e, Fall River County, and went to 4183 feet, total depth, where it was plugged. Amerada has not released information on the last 3 wells drilled. Completion of this well brings to an end the play Amerada has made in this area for 4 years, during which time the company leased large blocks in the area and did extensive seismographing.

☆ Illinois Basin

White County Pools Opened; Clay County Strike Assured

White County gets 2 pool openers; Clay County discovery assured.

White County: C. E. Brehm's Callicott 1, SE SE NW 10-6s-10e, is opening a new pool 1½ miles north of the Concord pool; during a drill-stem test the well made gas in 4 minutes and flowed in 35 minutes. Operator has set casing to test Aux Vases sand at 2950-60 feet.

Inland Producer's Rister 1, SE NE NE 15-4s-10e, is another pool opener for White County. Located 2 miles northwest of the Phillipstown pool, the well has pipe set for test of McClosky lime at 3125-35 feet. The well made gas in 7 minutes and showed 720 feet of oil and 60 feet of oil-cut mud during drill-stem test.

C. E. Brehm is rigging tools for Pyle Heirs 1, NW SE SW 13-5s-8e, a wildcat.

Clay County: Eason Oil Company's Gibson 1, SW NW SW 35-5n-7e, a mile northwest of the Hoosier pool, is swabbing 25 barrels of oil daily from Aux Vases sand at 2815-25 feet after a 30-quart shot.

Wayne County: A. J. Slaghter has another large flowing well in the eastern Illinois oil area. It is Hasselton 1, SW SW NW 23-2n-8e, which flowed 1100 barrels after acid treatment in McClosky lime.

Gallatin County: Joe Reznik's Valter 1, SE SE NE 3-9s-9e, a pool opener, is on pump test of Aux Vases sand at 2725-35 feet and is showing for approximately 40 barrels per day.

☆ Michigan

Osceola County Test Running Low to Garfield Discovery

The Pure Oil Company's Zimmerman 1, N½ NW SE 12-17n-7w, Osceola County, a mile northwest of the Garfield 5100-foot gas-distillate discovery, was coring at 5057 feet in shale-dolomite section without logging top Richfield sand, apparently throwing the test considerably lower than the discovery. Failure of the test might halt any additional development in the area. Two previous completions, southwest and southeast offsets, appeared to cut off extension possibilities in those directions.

Ogemaw County: Location is being cleared in the old West Branch Dundee lime oil field for a proposed 10,000-14,000 foot test by The Ohio Oil Company and Pure. St. Peter sand is objective of the test, which would be the first on the 10-mile-long structure.

☆ Ohio

Oil Extension, Gas Extension Received by West Newton

West Newton has oil extension and gas extension; Cinnamon gas found in Brush Creek; water tapped in Salt Creek St. Peter test; North La Grange has west extension.

Muskingum County: The Pure Oil Company's L. M. Thompson 1, NW SW 25w, Newton Township, ¼ mile east of its Eppley 2, made 72 barrels the first day. Clinton at 3417-64 feet was shot with 90 quarts.

On H. H. Roberts NW NW 23, Newton Township, Atha moved 1000 feet east of his No. 3, an oil well, and drilled in a 1¾ million cubic foot gas well in the upper part of the Clinton, reached at 3387 feet and drilled to 3427 feet.

Ohio Fuel Gas Company's C. F. Hearing 1, SE SE 25, Brush Creek Township, found gas in the Cinnamon while drilling a Clinton well. Pay at 2015 feet gauged 200,000 cubic feet with rock pressure 450 pounds after being open for 10 days. The well will be tubed and the rig moved ¼ miles west.

Industrial Gas Company's Sidney Whitmire 1, SE SE 26, Salt Creek Township, reached the St. Peter at 6704 feet and at 6740 feet had a hole full of water. A gas show in the Trenton will be tested when the bottom water is plugged off.

Lorain County: Ohio Fuel's D. M. Page 1, Lot 34, La Grange Township, a west extension to the North La Grange pool, found the sand thinning to 5 feet at 2402-07 feet and with a gauge of 625,000 cubic feet natural.

☆ Canada

Husky Expands Interests in Alberta and Saskatchewan

Husky Refining Company of Cody, Wyo., a newcomer in the Western Canadian field, is rapidly expanding its interests on the East Central Plains of Alberta and West Central Plains of Saskatchewan.

Husky has become co-owner with Franco Oils Ltd. of that company's extensive holdings, including a number of oil wells in the Vermilion and Lloydminster fields, the oil treating plant serving the Vermilion field, a 20-year gas franchise for Saskatoon, Saskatchewan, and over 100,000 acres of oil and gas rights in Central Alberta and Saskatchewan. Husky is providing operating capital for development program by Franco and its subsidiaries, and will take over active management of these concerns.

Husky has acquired a reservation from the Alberta government covering 135,040 acres of Crown oil and gas rights on the Central Plains, between Vermilion and Lloydminster fields.

Husky has commenced work in the Lloydminster field for a large asphalt plant, being imported from Wyoming, which will provide an important new outlet for the rising output of 14-gravity crude from that Alberta-Saskatchewan Border field.

Husky has started its first Canadian wildcat, at Lone Rock in Saskatchewan, 15 miles south and east of the Lloydminster field. The well is on property owned by a Franco subsidiary, Oil & Gas Development Company.

McColl-Frontenac Oil Company and Union Oil Company of California have added more than 454,000 acres to their original 226,000-acre joint holding in the North Pinhorn area of the southeast Alberta Plains, as they proceed with an exploration program following up the big (46,000 Mcf) natural gas discovery made in July. So far the discovery has been followed by 2 successes, one 2½ miles southwest of the discovery, the other 4½ miles to the northwest, and a third followup 5 miles northeast of the discovery is now under way. Source of gas production is the thick Bow Island sand series (up to 160 feet) of the Upper Cretaceous, topped around 2000 feet.

Frank McMahon, independent Calgary oil operator, has been granted a reservation on 202,677 acres of Canadian Pacific Railway oil and gas rights on the South Alberta Plains east of Calgary.

Imperial Oil Ltd. has commenced initial drill tests on recently acquired reservation in the Youngstown and Deville areas on the Central Plains; the Anglo Canadian, Home Oil, C. & E. Corporation team, initial wildcat on the Fort Augustus reservation on the Central Plains; the South Princess Syndicate, a wildcat in the 6-mile stretch separating 2 Madison oil discoveries on the South Plains; Standard Oil of B. C. and Nassau Explorations Ltd., an extension test in the West Taber Oil area on the South Plains; McColl Frontenac and Union Oil of California, third wildcat following up the North Pinhorn gas strike on the South Plains. In Saskatchewan,

EXPLORATORY COMPLETIONS

ARKANSAS WILDCATS

Nevada County—Failure: Spartan Drlg. Co.'s J. W. Plumbley 1, sw se ne 9-15s-22w, Tokio 2150, Cotton Valley 4150, abnd 8-18-46 at 4483.

Ouachita County—Failure: J. Lee Youngblood-Joe Mucher's Berg 1, c se sw sw 29-15s-17w, abnd 9-16-46 at 3205.

CALIFORNIA WILDCATS

Kern County—Failures: P. H. Frank & Elmer von Glahn's 1, 36-29s-20e, Kern River area, abnd 9-18-46 at 2047.

Miller & York's Richardson 1, 18-29s-21e, Sheep Springs area, abnd 9-18-46 at 2355.

Los Angeles County—Failure: C.C.M.O. Co.'s Bandini 1, 21-2s-12w, E. Los Angeles area, abnd 9-14-46 at 12,930.

Solano County—Failure: Standard's Kirby Comm. 2, 30-23s-19e, Kirby Hills area, abnd 9-11-46 at 6300.

FLORIDA WILDCAT

Volusia County—Failure: Sun's Powell Land Co. 1, swc 11-17s-31e, abnd 9-14-46 at 5961.

ILLINOIS WILDCATS

Clay County—Failure: W. L. Lichlyter's Coggan Hrs. 1, ne nw se 19-4n-8e, abnd 3089.

Clinton County—Failures: S. M. Levine's Kroft 1, sw sw nw 4-1n-3w, abnd 850.

T. A. Cummings' Minder 1, nw ne ne 30-3n-1w, abnd 1475.

Effingham County—Failure: H. M. Gray's Burke 1, ne ne ne 16-6n-5e, abnd 2527.

Fayette County—Failure: Murphy Oil Co.'s Harpster 1, nw ne nw 18-5n-3e, abnd 2071.

Gallatin County—Failure: Robinson & Puckett's Downen 1, se ne nw 36-7s-9e, abnd 3042.

Jasper County—Oil Discovery: J. W. Menhall's Eaton 1, nw nw nw 13-6n-9e, pump 168 bbls fr Rosiclaire sd 2939-43, td 2943.

Jasper County—Failure: C. R. Craft's Ritz 1, se nw ne 25-6n-10e, abnd 2887.

Lawrence County—Failure: Earl Brown's Brown 2, sw se nw 14-3n-13w, abnd 2326.

Marion County—Failure: Continental's Horman 1, sw nw se 21-1n-4e, abnd 3004.

Richland County—Oil Discovery: Joe Bauer et al's Brevoort 1, se ne sw 10-2n-11w, pump 10 bbls fr Benoit sd 1701-21, td 1852.

Richland County—Oil Discovery: Hageman & Ponds' Coen 1, ne se se 22-3n-11w, pump 15 bbls fr McCloskey lime 1861-69, td 1871.

Shelby County—Failure: W. R. Britton's Durst 1, nw ne nw 27-11n-4e, abnd 1911.

Wabash County—Failure: C. Wood's Schaefer 1, nw sw se 7-2s-13w, abnd 2934.

Wayne County—Failures: R. W. Hayes' Brown 1, sw ne sw 14-2s-6e, abnd 3385.

W. O. Lucas' Brown 1, se sw se 7-1n-6e, abnd 3134.

INDIANA WILDCAT

Gibson County—Failure: Continental's Blood 2, ne ne sw 13-3s-13w, abnd 2395.

KANSAS WILDCATS

Butler County—Failures: E. H. Adair's Stolli 1, nw nw sw 22-25s-3e, abnd 2824.

Dunne & Strait's Kistler 1, sw sw ne 27-26s-6e, abnd 2829.

Cowley County—Failure: Ashland et al's Frye 1, se nw ne 23-31s-3e, abnd 3340.

Ellis County—Failure: Doley's Kippes 2, se se 20-13s-16w, abnd 3550.

Graham County—Failure: Cities Service's Rome 1, se sw sw 27-9s-25w, abnd 4600.

Marion County—Failure: S & S Oil Co. et al's Meisinger 1, nw nw sw 22-20s-4e, abnd 2620.

Norton County — Failure: Helmerich & Payne's Baird 1-A, sw nw 24-5s-21w, abnd 3695.

Rush County—Failure: Sohio's Schneider 1, sw sw nw 9-16s-18w, abnd 3628.

NORTH LOUISIANA WILDCATS

Caddo Parish—Failure: Kerr-McGee Oil Industries' Harry Johnson 1, w of nec sw¼ 33-19n-14w, Upper Cretaceous 820, Nacatoch 927, base Ozan 1807, Massive Anhydrite 4278, base Stringer 4610, base James 5270, Three Fingers lime 5412, Travis Peak 5732, abnd 9-12-46 at pbtd 1585, td 6047.

Franklin Parish—Failure: Murphy-Sun's J. E. Holt 1-B, ne 32-16n-8e, 2 mi s Big Creek fld, Igneous 3260, Anhydrite 5190, abnd 9-6-46 at 5128.

Richland Parish—Failure: James A. Goin's Balfour 1, ne sw 22-18n-7e, abnd 9-16-46 at 3521.

SOUTH LOUISIANA WILDCATS

Beauregard Parish — Failure: Barnsdall's Edgewood Ld. & Logging Co. 1, 1004 w 992.7 n of sec 11-6s-10w, 2½ mi n Gordon fld prod, 4 mi nw Bear fld, abnd 9-20-46 at 12,827.

Iberia Parish—Failure: Texas Co.'s State-Vermilion Bay 9-B, T-15s-5e, Vermilion Bay, State Lse 334, abnd 9-20-46 at 13,095.

Plaquemines Parish — Failure: Texas Co.'s Delta Duck Club 16, 951 n 298 w of sec 5-21s-20e, abnd 9-13-46 at 10,233.

St. Charles Parish—Failure: Atlantic's State-Lake Pontchartrain 1-D, 7550 n 9320 e fr swc T-11s-9e, in unit 2, blk 4 of Lake Pontchartrain, abnd 9-19-46 at 10,385.

SOUTH LOUISIANA NEW PAY TEST

Jeff Davis Parish—S. Elton Distillate Discovery: Stanolind's W. H. Tupper 3-A, (OW DD) fr sec sect 32 go 990 n&w to lcn in 32-7s-3w, originally jkd and abnd 9094, perf 60 shots 9362-82, flow 32.94 bbls 50.1-gr, 12/64-in, gor 16,573/1, tp 2050 lbs, cp 2100 lbs, comp 9-6-46 at 10,500.

MICHIGAN WILDCATS

Allegan County—Failure: C. W. Kendall's Stephenson 1, sw nw sw 33-1n-16w, abnd 9-15-46 at 1108 ft.

Arenac County—Failure: Arenac O&G Co.'s State 1, c sw 31-20n-5e, Berea sand 1560 ft, abnd 9-17-46 at 1625 ft.

MISSISSIPPI WILDCATS

Newton County—Failure: Magnolia's State 1, Lse A, nw nw 16-5n-10e, Wilcox 1018, Eutaw 4519, Tuscaloosa 4958, Massive sd 6047, Comanchean 7274, abnd 9-15-46 at 6447.

Sharkey County—Failure: C. H. Murphy, Jr.-Sun's H. T. Greer 1, nwc 22-13n-6w, abnd 9-16-46 at 4517.

NEW MEXICO WILDCATS

DeBaca County—Failure: Pure's Pure-Federal 1, 31-3n-26e, abnd 9-17-46 at 6469.

Eddy County—Failure: E. Orcutt's Kepple 2, 19-17s-27e, abnd 9-15-46 at 1375.

SOUTH DAKOTA WILDCAT

Fall River County—Failure: Amerada's M. Vorhees 1, se ne sw 25-10s-8e, Pine Ridge area, comp 9-17-46 at 4183.

WEST TEXAS WILDCATS

Ector County—Oil Discovery: J. W. Murchison's Fraser 1, sect 7, blk 45, T-2-S, Texas & Pacific sur, pump 29 bbls fr lime 8510-63, comp 9-10-46 at 8563.

Mitchell County—Oil Discovery: Hickock & Reynolds' Ellett 1, sect 25, blk 29, T-1-N, Texas & Pacific sur, pump 72 bbls fr lime 2470-80, comp 9-11-46 at 3152.

WEST CENTRAL TEXAS WILDCATS

Coleman County—Failure: L. W. Ellicott, Tr.'s Eades 1, James West sur 276, abnd 9-13-46 at 2355.

Eastland County—Failure: Turner-Pope et al's Roberts 1, sect 26, blk 2, ETRR sur, abnd 8-31-46 at 1109.

Haskell County—Failure: R. O. Gould Co.'s Cox 1, sbdn 10, H. O. Campbell sur 110, abnd 9-16-46 at 3681.

Runnels County—Failure: William W. Gruber et al's Halfmann 1, sect 501, GH&H sur, abnd 9-16-46 at 5044.

Shackelford County—Failure: Bennett & Sorrells' Elliott 1, sect 88, Blind Asylum Land, abnd 9-14-46 at 4520.

Taylor County — Failures: West Central Drlg. Co. et al's Brown 1, sect 30, blk 17, Texas & Pacific sur, abnd 9-14-46 at 2747.

West Central Drlg. Co.'s Sandusky 1, sect 5, blk 18, Texas & Pacific sur, abnd 9-15-46 at 3197.

NORTH TEXAS WILDCATS

Archer County—Failure: L. Raymond Dawson, Jr.'s Kinder 1, Lot 49, blk 6, Clark & Plumb sur, abnd 9-7-46 at 1200.

Cooke County—Failures: Shell's Donnelly 1, e ½ James Neely sur, abnd 9-17-46 at 3382.

J. L. Trippitt's Miller 1, W. Hester sur, abnd 9-12-46 at 2380.

Montague County — Failure: Continental's Stephens 1, sw¼ R. H. Dooley sur, abnd 9-13-46 at 6975.

Wichita County—Failures: Ashton Oil et al's Dixon 2, n½ SA&MG sur, abnd 9-15-46 at 1557.

A. E. Blair's Honaker Estate 1, sect 8, CCSF sur, abnd 9-14-46 at 2030.

Wilbarger County—Failure: Frank Wood's Melton 1, s½ H&TC sur, sect 9, blk 5, abnd 9-9-46 at 2506.

Young County — Failure: A. R. Dillard's Griffin 1, s½ James Shelton sur, abnd 9-16-46 at 4661.

EAST TEXAS WILDCATS

McLennan County—Failure: C. R. De Jarnett et al's Goodman 1, 2000 fr sel 17,995 fr swl Carlos O'Campo sur, 2 mi sw of Robinsonville, abnd 9-16-46 at 1250.

Navarro County—Failures: A. E. Stewart et al's Hodge Estate 1, 330 fr swl 600 fr nwl Alfred Eaton sur, 1 mi n of Chatfield, abnd 9-11-46 at 3677.

T. N. & R. L. Wheelock et al's Smith 1, 330 fr swl 475 fr nwl Joseph Bragg sur, abnd 9-13-46 at 2977.

SOUTH CENTRAL TEXAS WILDCATS

Bandera County—Failure: Ray E. Pool's E. L. Rainey 1, 467 fr ne&nwl s½ GH&SARR sur 16, chert 1819, abnd 9-2-46 at 1020.

Williamson County—Failure: H. G. Albert et al's Carl Buenger 1, 876 fr wl 1764 fr nl 870 fr el 128-ac lse, Peter Cartwright sur, abnd in Austin chalk 9-10-46 at 1098.

SOUTH CENTRAL TEXAS OUTPOST

Frio County — Pearsall Failure: Wiegand Bros.' T. J. Gilliam 2, 467 fr swl 1853 fr nwl BS&F sur 1, 642.6-ac lse, 1 mi ne Pearsall fld, 2800 sw Gilliam 1, small pumper fr crevice at 4873, abnd 9-10-46 at 4360.

SOUTHWEST TEXAS WILDCATS

Duval County—Failures: J. W. Gorman's Farmers Life Ins. Co. 1, 330 fr s&wl sur 557, 320-ac lse, 3½ mi ne Loma Vista fld, 4 mi w Strake fld, abnd 9-15-46 at 3617.

Taylor Ref. Co.'s E. A. Parr 4-E, 446 fr sl 2525 fr el J. Poitevent sur 279 on 240-ac lse, 4000 e of gas prod, ½ mi ne oil prod at Agua Prieta fld, abnd 9-3-46 at 5055.

Duval County—Oil Discovery: H. H. Howell's Texas Co. 1, 1305 fr wl 330 fr nl 133-ac lse, 3812 fr el 330 fr nl BS&F sur 187, dual comp: pay 3656, perf 16 shots 3657-67, flow 252 bbls 49.2-gr, 3/16-in, gor 405/1, cp 490; pay 3819, perf 32 shots 3820-43, flow 181 bbls 46-gr, 3/16-in, gor 312/1, tp 250, comp 9-4-46 at 4782.

Webb County—Failures: Dulaney Oil Co.'s Frost Nat. Bank 1, 2661 fr sl 2714 fr wl 640-ac lse, in sur 603, 1 mi w Mirando City fld, abnd 9-9-46 at 2411.

O. W. Killam's A. M. Bruni Est. 1, 330 fr wl 865 fr sl 628-ac lse, 330 fr wl 2310 fr sl T. Vasquez sur 78, abnd 9-13-46 at 3670.

LOWER TEXAS COAST WILDCATS

Live Oak County — Distillate Discovery: Continental's Mrs. Clay W. Burns 2, 660 fr swl 1980 fr nwl Wesley Sellman sur, 7714-ac lse, perf 12 shots 10,121-132, flow 33.4 bbls dist, 9/64-in, gor 58,000/1, comp 8-28-46 at 10,214.

Refugio County—Failure: Monday Oil Co.'s F. V. W. Heard Est. 1, 467 fr nw&swl 300-ac lse, James Power sur, abnd 8-29-46 at 6160.

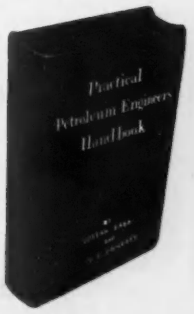
Sat Patricio County—Oil Discovery: Claud B. Hamill's Ruth P. Sweatt et al 1, 330 fr n&el lot 4 sect 7, 2nd sbdn Taft Farm lands, 440-ac lse, 2 mi e se Taft fld, pay 5604, perf 20 shots 5602-07, flow 34.15 bbls 21.2-gr, ¼-in, comp 9-4-46 at 5642.

LOWER TEXAS COAST NEW PAY TEST

Hidalgo County—McAllen Distillate Discovery: Coastal Ref.-Cook & Thompson's O. L. Biedenharn 1, 330 fr n&el lot 4 blk 12, Steele & Pershing sbdn and 25.5-ac lse, 1 mi e McAllen, Felix Hinojoso Porc 66, pay 7687-7757, perf 7696-7714, flow 60 bbls 51-gr dist, 3.5 mln gas, ¼-in, comp 9-4-46 at 9302.

PRACTICAL PETROLEUM ENGINEERS' HANDBOOK

By JOSEPH ZABA, E.M.M.Sc. and W. T. DOHERTY



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This handbook was compiled and published for the purpose of saving the time of operators, engineers, superintendents, foremen and others.

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Chapter III — Power Transmission
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Chapter V — Drilling
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UPPER TEXAS COAST WILDCATS

Austin County—Failure: Pure's Willie Stepan 1, start m/ely/sec 183-ac tr out of 239.03-ac lse, go nw alg nel 933 th 1475 sw at ra to lcn, Eliz. M. Kuykendall sur, 3½ mi se Brenham Dome, abnd 9-15-46 at 11,005.

Wharton County — Failure: Joseph Hornberger, Jr.'s Bodungen 1, 330 fr n&wl 80-ac lse, sect 42, E. C. Ogburn sur, 7 mi s Pierce, 2 mi w Withers prod, abnd 9-16-46 at 7405.

UPPER TEXAS COAST NEW PAY TEST

Matagorda County — Tidehaven Distillate Discovery: Ralph A. Johnston's Live Oak Farms 1, 545 fr nl 660 fr el 70-ac lse, Josiah Tilley Lge, perf 60 shots 8756-72, flow 184 bbls 52-gr, 3,681,000 gas, gor 20,000/1, tp 2510, comp 9-10-46 at 9002.

WESTERN CANADA WILDCATS

Central Alberta Plains — Beaverhill Lake Failure: Anglo Canadian-Home Oil-C. & E. Corp.'s Beaverhill Lake 1, lsd 7 11-52-17w4th, abnd 9-12-46 at 3017.

Elk Point Gas Discovery: Anglo Canadian-Home Oil-C. & E. Corp.'s Elk Point 1-A, lsd 7 26-56-5w4th, flow 3,000,000 fr L. Cret. at 1305-20, 9-13-46 at 1653.

Kinsella Failure: Imperial Oil's Kinsella 21, lsd 7 28-50-13w4th, abnd 9-16-46 at 2143.

WEST CANADA OUTPOSTS

Kinsella Gas Extensions: Imperial Oil's Kinsella 20, lsd 7 32-46-9w4th, flow 5,050,000 fr Viking sand, comp 9-13-46 at 2112.

Imperial Oil's Kinsella 16, lsd 6 6-46-8w4th, flow 2,000,000, comp 9-12-46 at 2146.

Provost Gas Extension: Imperial Oil's Provost 3, lsd 6 27-37-3w4th, flow 4,700,000 fr Viking sand 2335, comp 9-13-46 at 3130.

South Alberta Plains—North Pinhorn Gas Extension: McColl-Frontenac-Union of Calif.'s No. 4B-16-3-8, flow 8,000,000 fr Bow Island sand, comp 8-31-46 at 2200.

WILDCAT STARTS

CALIFORNIA

Buttes County: Standard's Odell 1, 9-20n-1e, Chico area, lcn.

Kern County: Seaboard Oil Co.'s Seaboard Richfield 76-36, 36-29s-29e, lcn.

Gannon, Gannon & Aslin's 69-J-2, 36-29s-20e, Temblor Ranch area, lcn.

Gannon, Gannon & Aslin's 69-J-3, 36-29s-20e, Temblor Ranch area, lcn.

Signal O&G Co.-Honolulu's Carpenter 1, 6-28s-19e, Williams Anticline area, lcn.

Los Angeles County: Standard, Operator's Six Companies Fee 2, 2-3s-15w, El Segundo area, lcn.

Monterey County: Texas Co.'s Currell 1, 4-21s-8e, Oasis area, lcn.

Orange County: Amerada's Anaheim Sugar 64-7, 7-6s-10w, Huntington Beach area, lcn.

Barnhart-Morrow Cons.'s Alford 2, 18-6s-10w, Huntington Beach area, lcn.

A. W. Lyddon, Operator's Irvine 7-1, 7-6s-10w, Huntington Beach area, lcn.

San Mateo County: Progressive Solvents Corp.'s Walter Moynier 1, 24-7s-6w, San Gregonio area, lcn.

Ventura County: Superior-British-American's Black 3-A, 13-4n-18w, Del Valle area, lcn.

Standard's McGrath 2, 26-2n-23w, Montalvo area, lcn.

Richfield Oil Corp.'s Tapo Fee B-1, 29-3n-18w, Simi area, lcn.

COLORADO

Prowers County: California Co.'s Luster 1, c ne ne 10-22s-47w, Wiley Dist, drlg 600.

FLORIDA

Dixie County: Sun's Hazel Langsdon 1, nw sw 8-8s-14e, mim.

ILLINOIS

Bond County: Roberts & Hailes' Hailes 1, sw sw sw 13-4n-3w, lcn.

Clay County: A. J. Slagter, Jr.'s Gray 1, se ne ne 29-3n-6e, drlg.

Clinton County: Joe Kesl, Jr.'s Malbaum 3, nw ne se 12-3n-3w, drlg.

Edgar County: H. O. Miller's Tate 3, se sw sw 33-13n-13w, drlg.

H. O. Miller's Tate 4, nw se sw 33-13n-13w, drlg.

Jasper County: Nat. Assoc. Pet. Co.'s Payne 1, ne se ne 16-7n-9e, drlg.

Russell P. Johnson's Miller 1, nw se ne 32-7n-10e, lcn.

Jefferson County: Nat. Consumers Oil Co.'s Nowicki 1, se ne se 9-3s-1e, lcn.

Ashland's Irwin 1, se nw sw 24-4s-4e, drlg.

Marion County: Ralph Halbert et al's Jones 1, nw sw nw 8-4n-3e, lcn.

Moultrie County: Ben J. Taylor's King 1, se ne se 5-12n-6e, drlg.

Richland County: Hageman & Ponds Wiseman 1, se nw se 27-3n-11w, lcn.

Shelby County: Continental's Lordwig 1, se se se 35-10n-6e, lcn.

W. R. Britton's Kensil 1, nw se se 21-11n-4e, lcn.

Paxton Oil Syndicate's Lovins Hrs. 1, ne ne ne 36-12n-5e, drlg.

St. Clair County: J. L. Jeffries Lends 1, nw ne ne 25-1n-10w, lcn.

Wabash County: Hayes & Wolf Oil Co.'s Smith 1, nw nw sw 17-1s-13w, drlg.

Magnolia's Pfeiffer 1, se ne nw 11-2s-14w, drlg.

C. Wood's Schaefer 1, nw sw se 7-2s-13w, drlg.

Wayne County: J. W. Menhall's Stein 1, se ne se 18-1n-8e, drlg.

White County: Inland Producers Co.'s Rister 1, se ne ne 15-4s-10e, drlg.

Nat. Assoc. Pet. Co.'s Bochman 1, sw nw nw 16-5s-9e, drlg.

J. W. Thompson's Bruggen 1, ne nw sw 13-5s-10e, lcn.

C. E. Brehm's Callicott 1, se se nw 10-6s-10e, drlg.

KANSAS

Barber County: Skelly's Harbaugh 1, sw ne ne 15-33s-12w, rur.

Butler County: K. T. Weideman's Shinn 1, sw sw ne 19-28s-8e, spud.

R. W. Holcomb's Fee 1, ne nw nw 27-29s-3e, mim.

Greenwood County: Ward McGinnis' Ramsey 1, ne sw ne 20-26s-11e, spud.

Rush County: Darby & Bothwell's Sankey 1, sw sw sw 18-17s-18w, lcn.

Sumner County: Schneider & Cameron's Sheppard 1, sw se nw 1-32s-2e, rur.

NORTH LOUISIANA

Bienville Parish: Lion Chemical Corp.'s Ozley 1, c sw ne 13-17n-6w, Travis Peak test.

Morehouse Parish: Atlas Oil & Refining Co.'s Mott 1, c sw se 30-19n-7e, drlg 1208.

SOUTH LOUISIANA

Acadia Parish: Barnsdall's Ozeman Young 1, nec 71-7s-2w, between Tepetate and W. Tepetate flds, spud 9600-ft test.

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Union of Calif.'s Delcambre 2, 660 s&w of nec 4-14s-5e, 5 mi sw Avery Island, 13,500-ft test.

Jeff Davis Parish: Sohio's Adam Bertrand 1, 2016.9 n 670.3 w of sec sect 8 in c ne se 8-8s-4w, 3 mi w sw China fld, 9300-ft test.

MICHIGAN

Allegan County: J. W. Lang Co.'s Woudwyk 1, ne se sw 16-4n-15w, lcn.

W. C. Praythers Durand 1, nw se se 25-3n-14w, lcn.

Eaton County: Fisher-McCall's Zuber 1, se nw nw 9-2n-3w, dr.

Livingston County: Panhandle Eastern Pipeline Co.'s McPherson 1, nw sw se 35-3n-4e, dr.

Ogemaw County: Mutch and Major's Benjamin 1, nw se se 24-22n-2e, rig.

MONTANA

Toole County: Husky Ref.'s Henry 1, c se ne 17-36n-1e, Kicking Horse Dome, mim.

WEST TEXAS

Andrews County: Olson Drlg. Co.-Skelly's Lockhart & Brown 1-A, 1980 fr s&wl sect 21, PSL sur, 9300-ft Ellenburger test.

Crockett County: Stanolind O&G Co.'s University 1-TT, 660 fr se 660 fr wl sect 12, blk 39, University Land, 8600-ft Ellenburger test.

El Paso County: Albert R. Jones' Sorley 1, 660 fr nl 1980 fr el sect 17, blk 5, PSL sur, 4000-ft Ellenburger test.

WEST CENTRAL TEXAS

Coleman County: H. T. Owen-Rhodes Drlg. Co.'s Hill 1, 2333 fr el 467 fr sl H. Warfield sur 22, 4000-ft rotary test.

Concho County: B. A. Duffy's Burk 1, 2454 fr nl 1772 fr el sect 12 F. D. Wilson sur, 1900-ft cable-tool test.

Fisher County: Elias A. Hall's Terrell 1, 1980 fr sl 600 fr wl sect 80, blk 1, H&TC sur, 6000-ft rotary test.

Haskell County: Thomas D. Humphrey's Brownfield 1, 330 fr el 330 fr sl J. N. Gainer sur, 3600-ft rotary test.

NORTH TEXAS

Archer County: Fortex Oil Corp. et al's Wilson Estate 1-A, 330 fr s&wl lot 2, ATNCL sur, 4250-ft rotary test.

A. R. Dillard et al's Herndon 4, 150 fr n&wl sect 1, SPRR sur, 1800-ft rotary test.

L. T. Burns' Schroeder 1, 750 fr nl 1700 fr wl lot 27, Clark & Plumb sur, 2000-ft rotary test.

Clay County: Gus Blakely's Engle 1, 780 fr wl 1250 fr nl Orange CLS sur, 850-ft rotary test.

Cook County: Nortern Ordnance's Wilson 6, 1160 fr wl 100 fr nl S. W. McKneely sur, 5000-ft rotary test.

Throckmorton County: C. Sztykgold's Richardson 1, 660 fr n&el nw¼ sect 3083, TE&L sur, 5500-ft rotary test.

Wichita County: William Meredith's Klinkerman 1, 435 fr nl 1040 fr el blk 263, Waggoner Col. sur, 1800-ft rotary test.

Young County: Reno Oil Co.'s Graham-Stewart 6, 1200 fr nl 520 fr wl blk 9, Young CSL sur, 565-ft rotary test.

EAST TEXAS

Angelina County: Bennett & Sorrells' McKnight 1, 330 fr nwl 2310 fr swl John Durst sur, 3 mi e of Wells, woc 870, 5800-ft test.

Franklin County: Ben T. Head et al's James A. Litterell 1, 421 out of nwc 145-ac tr, 421 fr wl 700 fr nl J. N. Keith sur, 3 mi w Hagansport, 4500-ft test.

Nacogdoches County: Dunigan Brothers' Cranford 1, 330 e of wl 330 n of sl J. M. Marquez sur, 3½ mi sw of Cushing, lcn.

EAST TEXAS BORDER COUNTIES

Cass County: Atlas O&R Co.'s Laura Thomas 1, 1120 s of nl 600 w of el W. G. Anderson sur, 660 fr n&el 71.47-ac tr, 5500-ft test.

Nacogdoches County: Dunigan Bros.' Arkan Cranford 1, 330 e of wl 330 n of sl 184-ac tr, 7055 s of nl 7055 w of el Jose Maria Musques sur, 4600-ft test.

SOUTH CENTRAL TEXAS

Medina County: Chas. H. Wagener's A. Dock Griesenbeck 1, 160 fr sl 800 fr wl lot 14-A, blk 5, survey 1, Medina Irrigated Farms, 1 mi s Pearson Switch, lcn.

SOUTHWEST TEXAS

Webb County: O. W. Killam's J. G. Garcia Heirs 1, 342 fr sl 186 fr el blk 9, sur 2363, on 160-ac lse, 2 mi e Mirando City fld, mir 2500-ft test.

Texas Co.'s Grant Adami 1, 1650 fr s&el W. Adami sur 10, 1065.48-ac lse, 2½ mi sw Adami fld, 2000-ft test.

Foss & McCartney's E. T. Laubscher 1, 330 fr ne&sel lot 29, Joaquin Galan sur 2292, 160-ac lse, 5000-ft test.

LOWER TEXAS COAST

Bee County: H. H. Howell's Moreman 1, 330 fr s&wl 117.67-ac lse, J. T. Malloy sur, 1 mi n Skidmore, 5000-ft test.

Brooks County: Humble's D. J. Sullivan 3-C, 1980 e&n fr nwc J. F. Dawson sur 154, 5560 ne Sullivan 4-C gas well in J. Forrester sur 5, Mariposa outpost, 9300-ft test.

Calhoun County: Cecil H. McSpadden et al's W. C. Melbourn 1, 660 fr ne&nwl middle portion of 320-ac lse, Benito Morales sur, 6 mi s se Pt. Lavaca, on Humble farmout, mi.

Jackson County: Floyd L. Karsten's Martin O'Connor 1, 500 fr nl 1500 fr el 628-ac lse and lot 5 in swc Elix. McNutt sur, 3½ mi w nw Texana fld, on Amerada farmout, spud 7000-ft test.

Jim Wells County: C. V. Lyman's John LaPrelle, Sr. 1, 330 fr s&wl 158.03-ac lse, nw¼ fract sect A, Richard King farm lots sbdn, ½ mi s Bentonville gas-cond prod, drlg 1011.

Texas Co.'s H. C. de Tijerina 37, 2338 fr nl 3000-ac lse, 6182½ w of el sur 270, A. Canales sur 360, 3215 w Tijerina-Canales prod, 8000-ft test.

UPPER TEXAS COAST

Brazoria County: Cecil Hagen's Mary E. Norris 1, 330 fr n&wl lot 369, Emigration Ld. Co. sbdn, 15-ac lse, Lavaca Navigation Co. sur 3, ¾ mi nw prod, 8800-ft test, drlg 3047.

Lee Bros. Oil Co.-Stuart et al's R. T. Schwartz 1, 601.15 fr nl 542.6 fr el lot 6, 1 mi nw Pearland, 29.2-ac tr, HT&B sur, 5500-ft Frio test, spud.

Jefferson County: McCarthy O&G Corp.'s Ed. F. Lohmann et al 1-A, 330 fr n&wl 160-ac in ne¼ P. W. Farr sur sect 72, 640-ac lse, 2 mi nw Hamshire disc area, 11,500-ft test, bldg rds.

Liberty County: Humble's John Tarlton Tr. 1, 487.2 fr e&wl 660 fr sl 56½-ac lse, Alex. Taylor sur, 5 mi w Hull fld, 10,000-ft test.

Montgomery County: Superior's Harry Brown 1, 690 fr el 380 fr sl 52.25-ac tr, 3690 fr el 2850 fr sl Wm. Hillhouse sur, ¾ mi sw gas-cond disc, 13,000-ft test, bldg rds.

WYOMING

Albany County: California Co.'s Holst 2, c ne se 13-17n-77w, Quealy fld, Tensleep test, rur.

WESTERN CANADA

Central Alberta Plains—Deville: Imperial Oil's Deville 1, lsd 9 36-51-20w4th, drlg.

Fort Augustus: Anglo Canadian-Home Oil-C. & E. Corp.'s Ft. Augustus 1, lsd 7 29-55-21w4th, rig.

Youngstown: Imperial Oil's Youngstown 1, lsd 5 3-30-9w4th, drlg.

South Alberta Plains—Princess: South Princess Syndicate's No. 3, lsd 12 8-19-11w4th, rig.

Pinhorn: McColl-Frontenac-Union of Calif.'s No. 6D-12-4-8, lsd 6 12-4-8w4th, c ne 10 acs, rig.

West Taber: Standard of B. C.-Nassau Explorations' Taber-Province 83-15A, lsd 5 15-9-17w4th, drlg.

Saskatchewan—Lone Rock: Husky Ref. Co.'s O&G Development 4, ne lsd 4 14-47-27w3rd, drlg.

AS A STEEL VAULT
SHUTS OUT THIEVES...
EAGLE LEAD WOOL
shuts out bottom water!
You don't take chances on a costly bottom water shut-down when you keep Eagle Lead Wool handy. Tamped into place in the well, this finely stranded metallic wool makes a permanent, durable, non-corroding seal that saves you time, oil and money. Eagle Lead Wool comes in convenient 50 pound sacks—is easy to place in special cartridge-shaped Eagle Wire Containers sized to fit all casings.
Order through your jobber today!
EAGLE PICHER EAGLE LEAD WOOL
Seals off bottom water
—keeps 'em flowing!
These 3 Eagle Bearing Metals meet most requirements . . .
Eagle Dreadnaught—for extreme speed and pressure conditions.
Eagle Outlasta—for medium speed and pressure conditions.
Eagle Durable—for low speed and pressure conditions.
THE EAGLE-PICHER COMPANY
Chicago • Joplin • Cincinnati • Dallas • Kansas City

SQUEAKS from the BULL WHEEL

Time Without End

Col. E. O. Thompson, member of the Texas Railroad Commission and a veteran of both world wars, tells of the father who recently approached him with the request that Thompson "talk to" his son, a former member of the colonel's army outfit.

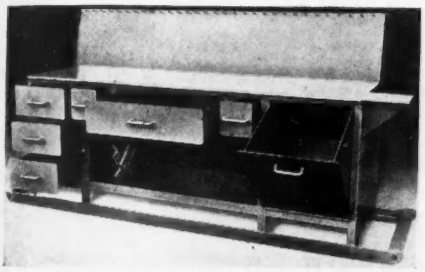
"Maybe you, his Army commander, can get him to settle down and go to work," the father explained.

Col. Thompson was agreeable enough, said he would be glad to see and talk with the boy, but suggested that perhaps all the fellow really needed to become adjusted was a little more time.

"More time?" the father roared. "He served under you in the FIRST world war!"

OWEN

TYPE "A" WORK BENCHES



PLENTY OF STORAGE ROOM

There's space in this all-steel, all-welded bench for all the hand tools on any drilling rig. Six big drawers and a rag bin, with a total of over 14 cubic feet of storage space, plus the tool pegs on the back apron, provide room for keeping all tools protected against damage and loss.

Buy one for each rig you own . . . they'll pay for their cost in the savings they effect.

SOLD THROUGH ALL SUPPLY STORES

Distributed in California by Howard Supply Co., Los Angeles, California

OWEN TOOL COMPANY

ROUTE 2 BOX 800-B V-2-4341

HOUSTON TEXAS

Standco

NO-SMOKE

STANDCO BRAKE LINING

for the easiest brake known. It "feeds off" evenly. Standco never scores brake rims. See page 2808 Composite Catalog.

Standco Brake Lining Co.

HOUSTON

Fire Her, Doc

"Doctor, this patient is very irritable and unreasonable."

"Well, your job is to soothe him, nurse. Give him whatever he wants."

"Sir, I'll resign first!"

The Home Stretch

"Fellow, can you spare a dime?"

"A dime? And just what would you do with a dime?"

"Well, I'll explain to youse. I've got nine hunnert and ninety-nine thousand, nine hunnert and ninety-nine dollars and ninety cents, and it's me ambition to hit de million mark."

Refuse?

Her hair in curlers, a faded robe fluttering behind her, the lady rushed out and hailed the garbage truck.

"Yoo hoo! Am I too late for the garbage?"

"No, ma'am. Jump right in."

Life Is Like This

"Caddy, how do you like my game?"

"It's okay, but I prefer golf."

No Kiddin'

"Which is more satisfied, a man with a million dollars or a man with six children?"

"A man with six children."

"How do you figure it?"

"Why, a man with a million dollars wants more."

Poet's Nook

Girls who like their bon bons
fudgey,
Wonder why they get so
pudgy.

Another Scot Story

Angus bought two tickets to a raffle and won a $1500 car. But when his friends gathered round to congratulate him, they found him looking miserable. "It's that second ticket," he mourned. "Why I ever bought it, I canna imagine."

This Curious World

She dressed like a barbed wire fence—protects her property without obstructing the view.

Girdles should be issued for rumors—the way they spread.

From a Georgia newspaper: "Many students and local fans are planning to follow the team to the scene of bottle."

Big 'Un Upcoming

The little boy awoke at 4 a.m. and asked his mother to tell him a story.

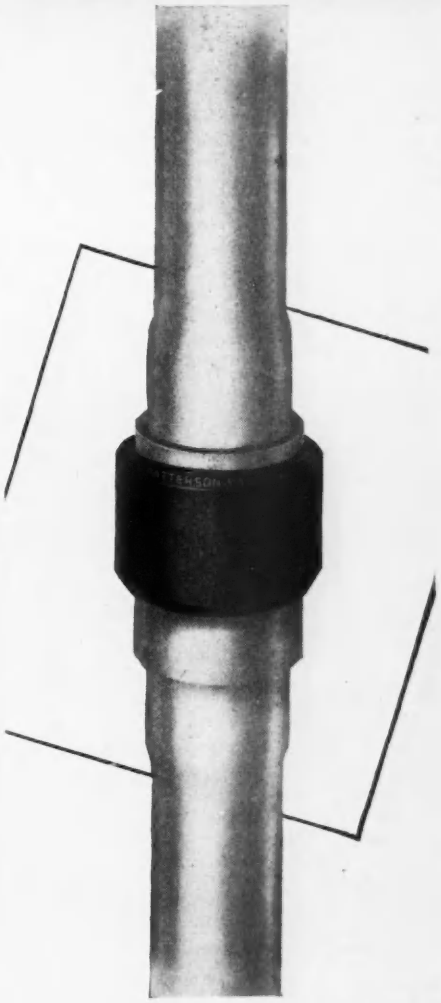
"Just be patient, Junior. Daddy will be home soon and we'll hear a story that'll be a honey."

His Secret

"So God sent you two more little brothers?"

"Yep, and He knows where the money is coming from, too. I heard Daddy say so."

"Best Bet Yet"



Cut Metal-to-Metal Contact

These oil-proof, insulating, wear-resistant, plastic tubing protectors are an integral part of the tubing collar. Made in all sizes, they prevent the metal-to-metal contact that causes many expensive "wet" jobs in pumping wells. Without this contact, the collars do not wear holes in the casing.

See Composite Catalog

Patterson-Ballagh TUBING PROTECTOR

LOS ANGELES HOUSTON 10 NEW YORK 6

Winthrop Rockefeller has joined the producing department of Socony-Vacuum Oil Company, in whose foreign trade department he had been employed before leaving to enlist in the Army in 1941. He fought in the invasions of Guam, Leyte, and Okinawa, and was recently discharged with the rank of lieutenant colonel. He has completed a report, requested by the Secretary of War, on veterans' adjustment problems. Rockefeller was formerly connected with Standard Oil Company of New Jersey, Humble Oil & Refining Company, and studied finance with the Chase National Bank.

»

E. G. (Ty) Dahlgren, assistant secretary of the Interstate Oil Compact Commission, discussed technical activities of the Commission before the Dallas Petroleum Engineers Club.

»

Harold A. Burt, division manager for Westgate-Greenland Oil Company in North Louisiana, has been transferred from Shreveport to Kansas City, Mo., and has been replaced at Shreveport by **W. H. James** of Wichita, Kansas.

»

Alex McCoy, Jr., Phillips Petroleum Company geologist, has been transferred from Bartlesville, Okla., to the Rocky Mountain Region and will headquarter in Casper, Wyo.

»

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933 Of The OIL WEEKLY, published weekly at Houston, Texas, for October, 1946.

State of Texas, County of Harris, ss:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared A. L. Burns, who, having been duly sworn according to law, deposes and says that he is the Business Manager of THE OIL WEEKLY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Ray L. Dudley, 3371 Chevy Chase, Houston, Texas; Editor, Warren L. Baker, 1613 Woodhead, Houston, Texas; Managing Editor, Silas B. Ragsdale, 1636 North Blvd., Houston, Texas; Business Manager, A. L. Burns, No. 7 Chelsea Place, Houston, Texas.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Gulf Publishing Company, Houston, Texas; James Anderson, Houston, Texas; A. L. Burns, Houston, Texas; James F. Carter, Jr., Tulsa, Okla.; Mrs. Mary Margaret Cashman, Houston, Texas; Mrs. Carolyn Dodson Dudley, San Angelo, Texas; Estate of Dr. N. L. Dudley, Deceased, Houston, Texas; Ray L. Dudley, Houston, Texas; Estate of W. S. Farish, Sr., Deceased, Houston, Texas; Wm. V. Gross, Utopia, Texas; Mrs. Anita S. Lane, Houston, Texas; Chas. H. Lane, Houston, Texas; Tom W. Nelson, Houston, Texas; Wallace E. Pratt, Carlsbad, N. M.; J. Kent Ridley, Houston, Texas; Mrs. Maude G. Sterling, La Porte, Texas; R. P. Swinsky, Houston, Texas; O. R. Waller, Chicago, Ill.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Sworn to and subscribed before me this 20th day of September, 1946.

P. J. AUCOIN.

(Seal) Notary Public in and for Harris County, Texas. (My commission expires June 1, 1947.)

Sam S. Caldwell, mayor of Shreveport for the past 12 years, has been named vice president and secretary-treasurer of the Arkansas - Louisiana division of the Mid-Continent Oil and Gas Association. He will succeed the late **Arthur R. Campbell** of Shreveport, and will assume his new work shortly after vacating the office of mayor in November. He was not a candidate for reelection as mayor in the recent primary.

Sam S. Caldwell

»

Eugene W. Vanderpool, Stanolind Oil & Gas Company geologist, has resigned to establish a residue research laboratory at Midland, Texas. He will specialize on analyses of pre-Permian formations.

»

J. C. McMillian and **W. Dave Henderson** have formed the partnership of Henderson & McMillian, consulting geologists firm at Midland, Texas, with offices in the Crawford Hotel. Henderson recently resigned as geological supervisor in West Texas and Southern New Mexico for Phillips Petroleum Company. McMillian during the last two years served as division landman for Stanolind Oil & Gas Company in the New Mexico-North Texas area, working out of Fort Worth.

»

Carl H. McAlister, 36, has been named chief geophysicist for Sunray Oil Corporation. Until recently he was chief geophysicist for Union Sulphur Company. McAlister spent ten years with Petty Geophysical Company, San Antonio. In 1942 he became a civilian research geophysicist with the Naval Ordnance laboratory, and resigned a year later to join Sinclair Prairie Oil Company as district geophysicist for the southeastern states, remaining in that position until he joined Union Sulphur last year.

»

Clyde F. Hamner, Midland, Texas, has been appointed manager of the Dowell Incorporated station at Midland. Hamner has been with the company since July, 1945, and previously was with Phillips Petroleum Company.

»

R. B. Kester, who spent 28 years with Standard Oil Company of New Jersey, has retired due to ill health and has moved to San Angelo, Texas. He started his oil career as a tool dresser in his native West Virginia in 1917, and four years later was named district superintendent for one of Standard's subsidiaries at Tampico, Mexico.

»

Henry P. (Hank) Evans, Wichita, Kansas, has been named assistant landman for Skelly Oil Company at Midland, Texas, succeeding **James R. Maedgen,** who has been promoted to district landman for the company's new office at Abilene.

Wesley G. Gish of San Antonio has been named vice president of Deep Rock Oil Corporation, in charge of land and geology. He succeeds **Glenn S. Dillé,** Tulsa, who recently resigned to return to practice as a consulting geologist. Gish was vice president of Transwestern Oil Company before its merger with Sunray Oil Corporation.

»

Harris Toler has been appointed head of the land and bond division of the Attorney General's department at Austin, Texas, succeeding **Capt. William J. Fanning,** resigned. Toler became associated with the Attorney General's department in 1944. He was assigned to the oil and gas division where he served until being appointed administrative assistant on March 1.

»

B. L. Kingston, production engineer for the J. M. Huber Corporation at Houston, spoke on "Use of Rotating Mechanical Scrapers to Combat Paraffin Accumulation in Pumping Wells" at the September 19 meeting of the Petroleum Engineers Club of Fort Worth.

»

Charles R. Evans and **Kent C. McKnight,** were transferred to Fort Worth headquarters of the Texas producing division of The Pure Oil Company from the Illinois division. Evans is chief scout for the company, and McKnight is chief clerk.

»

Phil Martyn, former chief geologist for J. S. Abercrombie Company, will enter the consulting field October 1 with offices in the Gulf Building, Houston.

»

Frank Manning, formerly rotary tool foreman of The Pure Oil Company's Gulf Coast Division with headquarters in Florida, has been promoted to district superintendent of the company's activities near Worland, Wyo.

»

Henry Keplinger and **J. M. Wanenmacher,** Tulsa petroleum engineers, delivered a paper on "Appraisal of Oil Producing Properties" before the Oklahoma Society of Petroleum Engineers in Oklahoma City.

»

Joe T. Dickerson has been named general attorney and assistant secretary on the regional staff of Shell Oil Company east of the Rockies, located at Houston. He was general attorney for the Texas-Gulf area for Shell before entering the army and has been in the company's New York office since his release with the rank of lieutenant colonel early this year.

»

Wilbur E. Chalfant has been appointed to the new post of personnel director, Houston division, The Ohio Oil Company. He was formerly field clerk in West Texas for Ohio.

»

C. F. Smalley has been named superintendent, and **O. F. Leichliter, Jr.,** assistant, at the new office of Mudge Oil Company at Duncan, Okla.

R. M. Cook

E. R. Poole

R. M. (Bob) Cook, general sales manager, and **E. R. (Ray) Poole,** manager of the foreign service department for Security Engineering Company, are on an extended trip to New York, New Orleans and Houston. After a short stay in Houston, Cook will visit Fort Worth and Midland, Texas, before returning to the home office in Whittier, Calif. Poole will go to Mexico City before returning to Whittier, and then will go to Barranquilla, Colombia, where he will be resident representative of the company. He has just completed a 6½-months tour of every oil-producing country in South America.

»

G. M. Stewart is on a three-month's tour of South America for Hunt Export Company of New York, Houston and Buenos Aires. He will also represent the line of Hunt Tool Company products. Before joining the company in New York, Stewart was export manager for other oil tool manufacturers, and had been employed by maior oil companies in South America and Mexico. The company is also represented in Argentina by **A. P. Bolland,** and in Mexico and Central America by **W. Y. De Mouche.**

»

Dr. George L. Royer, assistant director of the Physical Chemical Section, Research Laboratories, Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J., has been awarded one of the first fellowships ever granted in the field of biological photography, by the Biological Photographic Association.

»

Harry A. Walker has been named plant engineer at Goodyear Tire & Rubber Company's tire factory in Lecheria, Mexico. Goodyear's plant in Mexico, recently expanded, produces tires, tubes and mechanical goods.

Deaths

I. W. Drake, 38, Houston independent oil operator, died September 20.

»

Ralph B. McKinney, 58, member of the board of directors of Hercules Powder Company, died September 21 in Wilmington, Del.

»

A. L. Bowden, manager of the oil and gas division of H. K. Porter Company, Inc., died at Pittsburgh August 27. He once represented Leonard Oil & Gas Company in the U. S. and in Colombia, Ecuador and other South American countries. He was a pioneer in the Hugoton, Kansas, gas field, and helped start the Duquesne Mining Company, a gold property, in Quebec, Canada. He joined H. K. Porter Company in 1943.

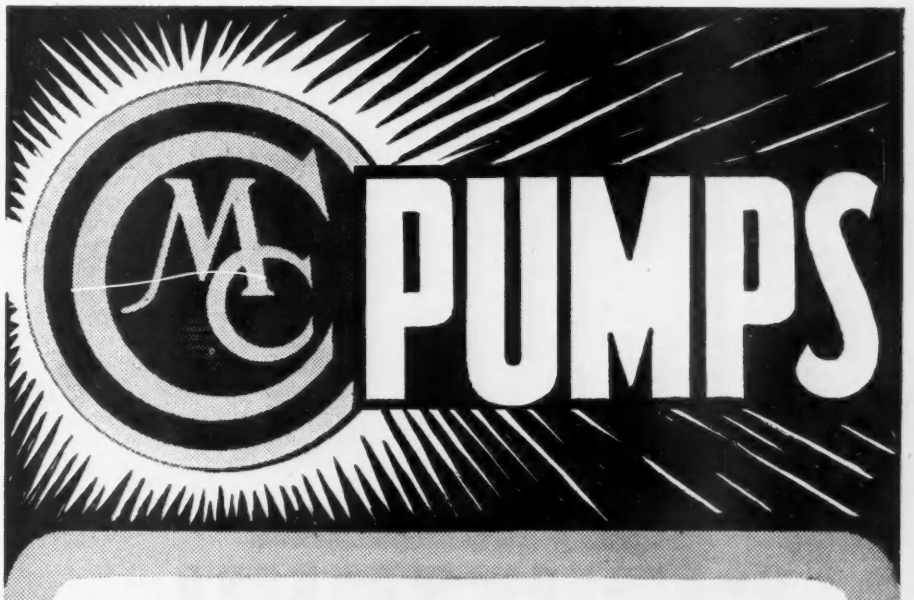
»

Robert M. Briggs, 54, veteran oil man, died September 21, at Santa Fe, N. M., after an illness of several weeks. He was associated with Clyde Alexander of Dallas.

W. D. Harris, 75, pioneer Oklahoma oil man, died September 27 in Norman, Okla. He went to Oklahoma in 1899, served as superintendent of schools in the Chickashaw nation at Sulphur, and later entered the oil business, operating in Texas and Oklahoma. He had resided in Norman since 1914.

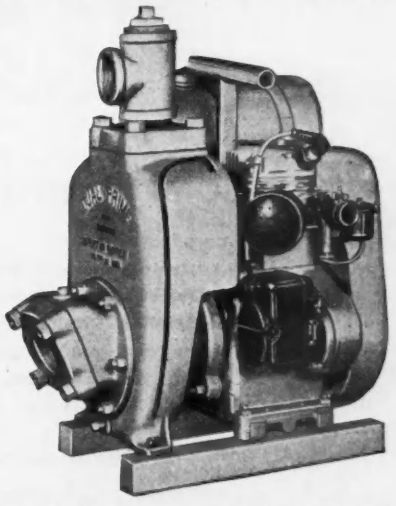
»

William Lyle Murrell, 55, Dallas, Texas, independent operator, died in Dallas September 15. A native of Dickson, Tenn., Murrell was active in East Texas during the last 18 years.



Handy—Portable—Large Capacity
LIGHT WEIGHT CENTRIFUGALS

Pump illustrated, Model 8A, weighs only 115 pounds. Capacity to 8,000 gallons per hour . . . fast priming. Powered with single cylinder 4 h.p. engine. Compact . . . convenient carrying handle. One of the complete CMC Line of Centrifugals from 1½" to 10" size; also High Pressure and Diaphragm Pumps. Get new Pump Bulletin.



CONSTRUCTION MACHINERY COMPANY
WATERLOO, IOWA
Houston Office, 1506 Esperson Building
Specializing in High Pressure Centrifugals . . . Dual Prime Centrifugals . . . Diaphragm Pumps for the oil field!

R. P. Green

Max R. Sheets

Two Executives of Engineering Laboratories Form New Firm

R. P. Green, former executive vice president and chief engineer, and Max R. Sheets, former chief inspector of Engineering Laboratories, Inc., Tulsa, have organized the Technical Sales Company, Tulsa, to handle the sale, repairs and servicing of seismograph equipment. At present they are acting as sales representatives for Engineering Laboratories, Inc.

In addition to seismograph equipment the Technical Sales Company handles the Penetron and bottom hole gauges. The Penetron was developed by Texaco Development Company and is manufactured exclusively by Engineering Laboratories, Inc., and is used in refinery and gasoline plant inspection.

Hughes "Thru the Ages" Paintings To Be Distributed in October

Full size color reprints of the original paintings used in the "Thru the Ages" series of Hughes Tool Company advertisements in THE OIL WEEKLY will be ready for distribution the latter part of October. These color reprints will be sent to anyone upon request.

The series, representing a tremendous amount of research, depicts the various geological ages with the originals having been painted for the Hughes Tool Research Division Collection by John Pemberton Cowan.

Personnel Changes Announced By Axelson Manufacturing

Changes in personnel and additions to the Mid-Continent field staff were announced by Axelson Manufacturing Company.

Field personnel and changes and additions to the Pump and Rod Division in the Mid-Continent area are as follows:

Clarence W. Duplissey went to Axelson in 1945 from The Continental Supply Company, Greggton, Texas, having also worked for Whitehead Supply Company. He joined the Air Force and served three years, attaining the rank of captain. With headquarters at Kilgore, Texas, Duplissey covers Overton and Kilgore, Texas, store points and surrounding fields served by these stores.

J. W. (Bill) Rockwell joined Axelson in 1937, representing the company in the South Texas territory with headquarters at Alice, Texas. He resigned to enter the Army in 1942 and was discharged in January with rank of captain. He rejoined Axelson as representative in the Western Kansas territory with headquarters at Great Bend, Kansas.

Trumen R. Reader, who joined Axelson in 1938 and worked until June, 1942, when he entered the service, represented the company at Seminole, Okla., and Hutchinson, Kansas, and is now representing Axelson in Mississippi and South Louisiana territory with headquarters at Jackson, Miss.

Chet Maguire covers Axelson's West Illinois territory with headquarters at Olney, Ill. He was employed by Axelson in 1935 as representative at Seminole. He joined the Army in 1942 and returned to civilian life three years later.

D. L. McDonald, employed by Axelson in 1946, has been assigned the Alice-Freer, Texas, territory with headquarters at Freer.

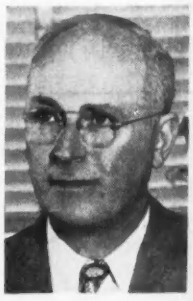
Transfer of Earl L. Chandler from the Eastern Mid-Continent division to the Dallas district has been announced. Chandler has been connected with Axelson since 1926.

William A. (Bill) Russell has been appointed to the district vacated by Chandler. Russell was employed by Mid-Continent Petroleum Corporation, Tulsa, for more than 16 years before he entered the Navy. He joined Axelson in 1945, covering Pennsylvania, New York, Michigan, Ohio and West Virginia with headquarters at Bradford, Pa.

Jack Brander, now located at Wichita Falls, Texas, covering the Electra, Muenster and Wichita Falls district, was employed by Axelson in 1937, and represented the company in Illinois until 1942, when he was inducted into the Army. He was discharged with the rank of captain to resume employment with Axelson in April.

Allis-Chalmers Tractor Engineer To Head Automotive Society

C. E. Frudden, consulting engineer of the Allis-Chalmers Manufacturing Company tractor division, was the sole nominee for the 1947 national presidency of the Society of Automotive Engineers. The nomination is tantamount to election.



C. E. Frudden

Frudden will be the first tractor man elected to the presidency of the 40-year-old society. He will take office at the end of January.

Affable and mild mannered, Frudden joined the Allis-Chalmers tractor organization in 1929. Shortly before the war he was promoted from chief engineer of the West Allis Tractor Division to executive engineer of the entire Allis-Chalmers tractor division.

INDUSTRIAL SUPPLY CO.
ISC

HERE'S SOMETHING WE GIVE AWAY

Friendly and personal service . . . and plenty of it. That's why all of our customers keep coming back. They like the way we do business. Our offering includes the largest Rotary Power Rig down to the smallest Production Valve . . . all nationally known, dependable and quality items. If we don't have it, we'll try to get it for you. Give us a try — we'll prove INDUSTRIAL service is the best!

MAIN OFFICES
500 Eighth St., Wichita Falls, Texas

STORES • Wichita Falls • Electra • Kamay • Turnertown • Freer
BRANCH OFFICES • Dallas • Tulsa • Houston • Wichita Falls • San Antonio
Oklahoma City

AT YOUR SERVICE AT ALL TIMES

Portability of C. W. Cotton Supply Company's "traveling supply store" can be visualized in the top photo. The trailer, 32½ feet in length, can be hauled into a new area at a moment's notice by any standard tractor truck. When location is reached, the trailer's wheels are removed, and it is lowered onto a super-structure, the front end tied down, and the store opened for business.

Right: Interior view of the "traveling supply store," showing locking tool-cabinet in the far front end, numerous compartments or "bins" on the left side, and on the right side a desk where operator keeps his records.

TRAVELING *Oil Field* SUPPLY STORE

A "traveling oil field supply store" available at a moment's notice to serve a new producing area has been designed by C. W. Cotton Supply Company, Tulsa. The traveling store is capable of setting up shop in a matter of hours and can remain at the scene of operations for months or years, if necessary, after which it can fold up and move away to a new scene of activities.

This new type of store is, in effect, a large and well-equipped trailer. The Tulsa firm has already set up its first unit at Ulysses, Kansas, in the rapidly-expanding Hugoton gas area, and has ordered additional units which will be placed where necessary.

The company plans a fleet of these mobile units as soon as materials are obtainable.

The trailer at Ulysses is 32½ feet long, and was specially fitted by the Trailmobile Trailer Company, Tulsa. It is fully equipped to stock as much oil field material as 70 percent of the average stationary supply stores over the country.

A huge superstructure, manufactured by the Lee C. Moore Company of Tulsa to fit around the trailer, accompanies the mobile store, thus facilitating the handling of large and heavy pieces of machinery. A place for storage of tubular goods is provided under the structure.

With the use of the portable stores, much time and money will be saved in each field. Instead of costly permanent buildings being erected at a location which someday may be far from activity, the trailers can be used to service an area within a radius of several hundred miles around a "mother" store. The portable store now at Ulysses is served by the mother store at Liberal, Kansas.

The trailers will be stocked with specific supplies needed in the particular areas in which they are to be moved. A pickup truck will be used to replenish "sold-out" equipment from the mother store by speeding it back to the trailer.

The trailer has a height of 7 feet, 3 inches, and the top and sides are fully insulated, the top's interior being of aluminum. Sides are finished in stainless steel halfway up, and oak panelling is installed to the ceiling.

The interior has fluorescent lighting, and there are ten electrical outlets within the trailer. A portable truck is used to roll up and down the wide aisle, and onto the platform which is part of the super-structure.

When the trailer is moved, it is hooked onto by any standard tractor truck. The super-structure is loaded, in three sections, onto a float, and is carried by another tractor truck.

When location is reached, the superstructure is taken off the float, and the two sides are placed parallel, leaving room for the trailer to go between. A rear section is then bolted into place, and heavy 4 x 6 planks, eight feet in length, are laid on top of the superstructure, thus forming the "dock." The trailer is then backed in and, when the trailer's wheels are removed, is lowered, where it rests on the super-structure. The front end of the trailer is then tied down and the "store" is opened for business.

The two pieces of superstructure are 36 feet each in length, to accommodate a full-size 36-foot trailer. It is heavily braced and is capable of handling all heavy machinery.

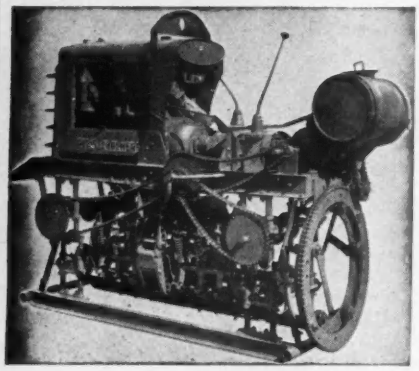
In winter the trailer will be heated with a gas steam radiator, and in summer it will be cooled by a suction fan.

In the front-end of the trailer is a locking tool box for small tools, and along the sides of the trailer are a score of compartments or "bins" where equipment is kept in order. There is sufficient space in the rear of the trailer for heavier equipment.

A door was made in the side, which makes the dock easily accessible. Several windows were installed and there are three ventilators in the trailer's top.

The C. W. Cotton Supply Company has recently been expanding its field of operations. Recent additions to the personnel include S. E. (Gene) Elder, who was former district manager of the Pittsburgh Steel Company's Tulsa branch for 18 years, who joined the company in April; S. M. (Puny) Blevens, who for six years was Mid-Continent district manager for the Larkin Packer Company, and Bill Martin, a former captain in the U. S. Marine Corps, who is now engaged in assisting in the operation of Kansas stores.

HECO PIPE LINE CLEANING MACHINES



Stationary or traveling type.
Stationary doping and wrapping machines.
FOR SALE, TRADE OR RENT
Head parts for all makes.

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Houston 9, Texas

Oil Writers in Texas

A group of New York and Washington newspaper men arrived in Houston last weekend on the first leg of a flying tour of the Gulf Coast oil country. Arranged by Standard Oil Company (New Jersey) the tour would acquaint the writers with modern methods of oil exploration, drilling and production practices.

Humble Oil & Refining Company will be host in Texas and has arranged trips to typical producing areas. Besides oil fields in Texas and Louisiana, the writers will visit the plants of Schlumberger Oil Well Surveying Company and Hughes Tool Company in Houston.

Seismograph Improved

Hugh G. Swift, Jr., of Tulsa, Okla., has developed a quake-proof seismograph at the Franklin Institute in Philadelphia, Pa. Swift attended the University of Tulsa and then went to work for Stanolind Oil and Gas Co., serving both at the company laboratory and in the field. In designing the improved seismograph Swift utilized principles that enabled scientists early in the year to bounce radar signals off the moon. During the war Swift was an instructor in radar. The seismograph registered a severe quake in the Caribbean area recently and the only damage suffered by the instrument was the breakage of a 10-cent spring which was replaced within a few minutes.

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